news • developments • research • significant articles • statistics • personalities • features

The·Northwestern·Miller

MILLING PRODUCTION SECTION

DECEMBER 10, 1946

IN TWO SECTIONS—SECTION TWO

Otto Foland and his son, Curtis E.—third and fourth generation millers

Four Generations of Millers

By Virginia Betts

FOUR generations of millers and with a prospective fifth generation in a five-year-old great-great grandson entering the family craft is the unique distinction claimed by the Foland family of St. Louis, with three members now employed as millers by the Valier & Spies Milling Company, 5020 Shreve Avenue, St. Louis.

Otto Foland and his son, Curtis E., are both employed in the work followed first by Otto's grandfather and then by his father. Curtis' son, young Larry, at the age of five, has decided he will also follow the family calling.

"Milling just runs in our family," the elder Foland declared in St. Louis last week when he took time off from his work at the Valier and Spies mill. The pleasant, wheaty aroma of freshly ground flour has had the same effect on the Foland family that printer's ink has had on many newspaper families.

Two of Mr. Foland's brothers were millers, and Mrs. Otto Foland has been working for Valier and Spies for three years. "However," she commented while at work in the cereal department, "I'm the first miller on my side of the family. I suppose I picked up the interest from my husband's family. When I married my husband, he was a miller," she continued, "and he's still a miller. That's the way our family will always be, (Continued on page 12a)

Four Generations of Millers 1a

Redesign of Milling Machinery 3a

Soil Quality and Wheat Quality 4a

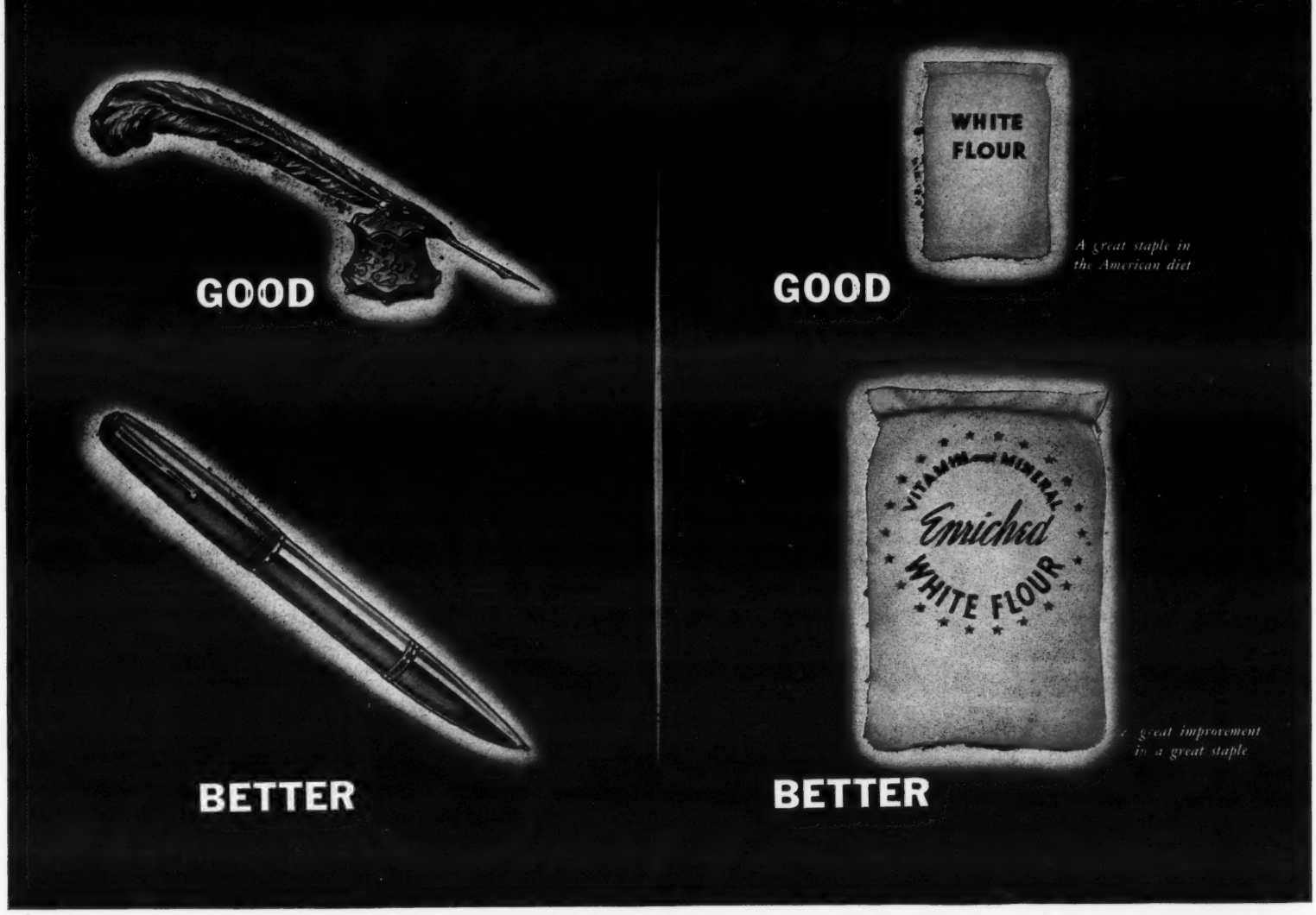
Influence of Bread on Tooth Decay 5a

Wheat Storage: Time and Temperature 6a

Saving Machines by Proper Lubrication 18a

Making Emergency Bearing Repairs 20a

Volume 228 • Number 1



and Merck Flour-Enrichment Mixtures enable you to make this Better flour Best . . . . . .

One of the greatest single contributions to national nutrition is the universal improvement in our diet provided by enrichment.

Throughout the enrichment program, the milling industry has expected, and we believe has received, the utmost in co-operation and service from the Merck organization—as well as the best possible in vitamin mixtures.

Merck Flour-Enrichment Mixtures are smooth and free-flowing. They provide important operating advantages in continuous feeding or batch-mixing. They facilitate accurate enrichment.

The milling industry can always depend on receiving *outstanding* mixtures from the *outstanding* leader in the synthesis, development, and large-scale production of vitamins.

STOCKS OF MERCK VITAMIN MIXTURES ARE CARRIED AT:

Buffalo, N. Y. • Rahway, N. J.
St. Louis, Mo. • Dallas, Tex.
Chicago, Ill. • Seattle, Wash.
Kansas City, Mo.
Los Angeles, Calif.
Knoxville, Tenn.
Nashville, Tenn.
Philadelphia, Pa.
Oklahoma City, Okla.

MERCK VITAMIN MIXTURES

MERCK & CO., Inc. RAHWAY, N. J.

Manufacturing Chemists

New York, N.Y. • Philadelphia, Pa. • St. Louis, Mo. • Chicago, Ill. • Elkton, Va.
Los Angeles, Calif. • *In Canada:* MERCK & CO., Ltd., Montreal • Toronto • Valleyfield

MERCK MERCK

A Guaranty of Purity and Reliability

Redesign of Milling Machinery

By Roy K. Durham

Director, Technical Service Department, Millers National Federation

EDITOR'S NOTE: The following article is the text of an address delivered by Mr. Durham at the Short Course in Flour Mill Sanitation, held at the University of Minnesota, Nov. 13-15. The short course was arranged by the division of agricultural short courses, department of agriculture, University of Minnesota. Co-operating agencies were: Millers National Federation and the Minnesota Department of Agriculture, Dairy and Food.

Texts of some of the other leading addresses will appear in early issues of this journal.

IT is generally conceded that flour milling machinery should be redesigned if proper sanitation in the mill is to be achieved. Machines in use today were designed many years ago when the life of the equipment was the first concern and no thought at all was given to prevention of insect infestation.

Today the mill owner is in a dilemma. Is he to be compelled to junk his present equipment to achieve sanitation in his mill?

Insect control in a flour mill must satisfy two distinct requirements: (1) flour must be milled in a reasonably insect-free plant, and (2) finished flour must be reasonably free from insects and/or insect fragments.

Having once become established in a flour mill, insects, particularly the confused flour beetle, spread rather rapidly from one machine or elevator boot to another. It is obvious that in almost every elevator boot, conveyor and mill machine, there are places where flour and other mill stocks lodge and remain undisturbed. In such accumulations of stocks, insects do live and multiply.

In a mill of 2,000 sacks daily capacity, a thorough clean-up will produce from 2,000 to 3,000 lbs of material which remained even after the mill has been run empty for several minutes.

The task of redesigning flour mill machines to eliminate ledges and pockets where stocks may accumulate may be approached in one or all of three ways:

Three Approaches to Problem

1. Modification of current blueprints so that existing equipment may be altered to meet the new specifications.

2. Drastic changes in design resulting in entirely different machines which would be expected to induce millers to replace old machines. Certainly they would be specified in new mills.

3. Revolutionary changes in milling procedure which would necessitate entirely new and different equipment.

According to statistics taken from the 1946 Almanack published by The Northwestern Miller, there are 2,562 flour mills in the United States. It would be easy and sensational to say, "Junk them all." But that is economically impractical. I have chosen, therefore, to approach the subject of mill machinery design in relation to insect control in a manner which I hope will be most helpful in speedy improvement of the existing situation.

Dry, dirty wheat on its way to the cleaning system in preparation for milling may, and often does, contain insects in various stages of their life cycle. While there is no positive proof, there appears to be substantial evidence that these insects, whether dead or alive, account for much of the insect fragment count in finished flour. There is some difference of opinion as to whether insect life can withstand the severe treatment inflicted by wheat cleaning machinery.

Frequent inspection of the contents of elevator boots handling cleaned wheat on its way to the tempering system, or on its way to first break rolls, will disclose the answer in each individual flour mill. Inspections of this kind, if repeated over a period of several months and critically made, would probably prove that complete destruction of insect life by the cleaning system is very rare.

If insect life is present in the cleaned wheat boots, it is reasonable to assume that through this avenue of entrance the entire mill may eventually become infested. Obviously, insects living and crawling about in the flour and intermediate milling stocks which lie dormant inside of milling machines must occasionally venture into the moving stream of stock and be carried along to the rolls and there reduced to fragments or carried along alive to the packer. Larvae and eggs would follow the same path.

Importance of Clean Wheat

In the production of flour free from insects, or insect fragments, it is therefore extremely important that the wheat be adequately cleaned. A conventional cleaning system in a flour mill usually consists of a milling separator, one or two scourers, a machine to remove oats and other foreign grain, and one or more aspirators. A wheat washer is sometimes included.

The pendulum of opinion as to most desirable severity of wheat cleaning swings back and forth. Current ideas are on the side of moderate to mild scouring. Operative millers frequently comment upon the dangers of overscouring. They say it weakens the bran and leads to high ash in flour. They say scouring must not break the wheat berries. It is doubtful, however, if any ill effects in finished flour can be traced to severe scouring.

On the other hand, extraneous matter count in flour will show that there is a relationship between severity of the wheat cleaning process and fragment content of the finished flour. This will become more and more generally apparent as the extraneous matter determination comes into more widespread use.

Experiments have been conducted whereby cleaned wheat was drawn from the stream going to first break rolls, milled on a laboratory experimental mill and an insect fragment count made on the finished flour. A simpler procedure is to grind the wheat into meal on a laboratory grinder and count the insect fragments in the meal. Either method has disclosed that at least some insect fragments can be traced back to insects inside the wheat berries.

Impact Machines Quite Effective

Impact machines, which were installed originally to kill insect life in wheat on its way to the first break rolls, have been found quite effective as a means for releasing insect fragments which may subsequently be drawn off by strong aspiration.

Obviously, when used as an insect killer on roll wheat, an impact machine must be performing perfectly every instant if it is to prevent infestation from entering the mill. A brief period of anything less than 100% effectiveness would permit insect life to pass into an imaginary insect-free mill and would undo all the effort that had been exerted to make that mill free from infestation.

On the other hand, if installed primarily as a machine for breaking open the insect-containing wheat berries, thereby exposing insects or insect fragments so that they may be removed by aspiration, the impact machine may prove quite valuable in lowering insect fragment count in finished flour. This type of machine should also be effective in the removal of rodent fragments. By making critical examination for live insects in the contents of the boot of the elevator which handles the impacted wheat, one should be able to evaluate the effectiveness of the impacter as an insect killer.

Wheat cleaning machinery should be located in a building or room separated from the mill proper. Screenings should not be brought into the mill until treated in some manner to insure freedom from insect life.

Isolate Cleaning Department

In mills where wheat cleaning machinery is in the same rooms where flour is milled, the insect control problem is a very serious one. Treatment of the incoming dry, dirty wheat to destroy insect life is, obviously, the perfect solution, but unfortunately inventive ability has not yet supplied an adequate procedure. There is urgent need for an insect toxicant which might be fed into the incoming wheat stream and which would result in death to all infestation—at least that on the outside of the wheat berries. Such a chemical would need to meet all the requirements of food and drug regulations, be nontoxic to humans and farm animals, leave no undesirable odor, be nonexplosive or noninflammable and have no deleterious effect on baking characteristics of the finished flour.

In the majority of mills the wheat cleaning department is satisfactorily separated from the area in which flour is milled. But very few millers destroy or even attempt to destroy insect life in the screenings before bringing them into the mill for grinding and subsequent mixing into millfeeds. Grinding screenings in a hammermill destroys some but not all insect life. Certainly the grinding should be done before screenings are permitted to enter the mill proper. Since screenings are composed of sticks, straw, stones, sand, chaff, foreign grains, occasional bits of metal, as well as light wheat berries and portions of fractured grains, it is doubtful if this material can be satisfactorily put through the commonly used impact machines. One miller reports a fairly satisfactory job of killing insects in screenings by transporting the screenings pneumatically by suction in such a manner that they are drawn through the eye into the revolving blades of the fan. Impact thus created is claimed to be fatal to most, if not all, insect life in the screenings.

An ideal method for destroying insect life in wheat screenings would be treatment of the screenings stream with an insect toxicant in liquid or powder form which would be lethal to all stages of insect life. The probability of the discovery of such a

(Continued on page 23a)

OLD GRIST MILL — The Dawt Mill, located on the north fork of the White River in southwestern Missouri, has served a large community in Ozark county for the past 45 years. Grain is brought in by wagons and exchanged for flour or corn meal. The mill has two undershot wheels and has a daily capacity of 4,000 lbs of meal.

Soil Quality and Wheat Quality

By Dr. H. E. Myers

ABOUT THE AUTHOR: Dr. Myers is head of the department of agronomy, Kansas State College, Manhattan, Kansas, and has made an intensive study of soil fertility and crop production, especially in the Great Plains area. The accompanying observations on what may be expected of the protein content of wheat crops in the years to come will be of interest to all persons in the milling industry.

HIGH quality bread wheats are produced on fertile soils. Furthermore, such wheats are produced in areas of limited rainfall. It is not mere chance that the great bread wheat producing area of North America is found in the Great Plains region of Canada and the United States. It is in that region where both soil and climatic conditions are found that are favorable for the production of high quality bread wheats.

Quality in bread wheat may be measured by one of several different methods; one of the commonly used quality indicators is the percentage protein content of the grain. The percentage protein content of the grain is influenced by (1) climate, (2) soil and (3) variety. Since climate cannot be controlled by the producer except through irrigation, it will have to be eliminated as a quality determining factor that can be controlled. On the other hand, both soil and variety influences can be controlled to a considerable extent.

Soil Is Major Factor

Soil has a greater influence on protein content than does variety and, except for an occasional season, has a greater effect than does climate. The relationship of soil to wheat quality is through the plant nutrients supplied by the soil. Soils that are highly fertile will contain an abundance of all plant nutrients needed by growing plants. A less fertile soil will carry a lower amount of one or all of the nutrient elements. Soils formed under high rainfall conditions tend to be low in mineral nutrients such as calcium, potassium, phosphorus, magnesium and relatively low in nitrate nitrogen. In contrast, soils formed under low rainfall conditions such as exist in the main wheat belt, are abundantly supplied with mineral nutrients and originally had the capacity to supply nitrate nitrogen in adequate or above adequate amounts for high protein wheat. The abundant supply of available plant nutrients in wheat belt soils makes possible the production of high quality wheat.

Where wheat or any other crop is grown, the crop is finally limited in its development by one or a combination of more than one of several growth factors, such as one of several plant nutrients, water, plant pests, aeration of the soil and temperature. The wheat plants, or different parts of it, do not have a uniform composition but are very elastic in this respect. The grain may be low or high in ash, protein, vitamins, etc. If the yield is limited because of drouth in the presence of an abundant supply of minerals and nitrate nitrogen in the soil, the grain will be high in both ash and protein, and low in yellow berry kernels. On the other hand, if the yield is limited by a shortage of nitrate nitrogen in the presence of an adequate water supply, the grain will be low in protein and badly yellow-berried.

Leguminous Crops Beneficial

Protein content of wheat is related very definitely to the soil and its management. It is directly related to the quantity of nitrate nitrogen available to the crop. Wheat after alfalfa or sweet clover usually will have a higher protein content than wheat after a nonlegume, all other factors being identical. The difference is frequently from 2 to 4% of protein. Wheat on an early prepared seedbed will have usually a slightly higher protein content than wheat on a late prepared seedbed. Summer fallowing will increase the protein from 2 to 4% on the average. Only in exceptional seasons will the protein content be higher in wheat produced on cropped land than on fallow land. Nitrogen fertilizers, if applied at rates greater than that needed to stimulate yield, may increase greatly the protein content of the grain. The extent of the influence is related to the quantity of nitrogen added in the fertilizer and the stage of growth of the wheat plant when the application is made. At the Kansas Agricultural Experiment Station, the protein level has been raised above 20% by the addition of excessive amounts of sodium nitrate to the soil. In the same experiment, wheat from the untreated soil in an adjoining plot averaged 13% protein.

Dark green spots about three feet in diameter, accompanied by increased plant growth, are frequently observed in wheat fields that have been grazed. They are caused by the deposition of aminal urine which is an excellent nitrogen fertilizer. The green spots indicate that the soil is low in available nitrogen. They do not occur on highly fertile soils. Wheat produced on these spots will contain, practically always, a higher percentage of protein than the surrounding wheat and, in addition, usually produces more wheat per unit area.

The percentage protein in the grain is related to the nitrate nitrogen supplying capacity of the soil in relation to the final yield of the crop. The capacity of an untreated soil to supply nitrate nitrogen is determined to a major extent by the total nitrogen content of the soil. The two factors are directly related. Soils lower in total nitrogen, but otherwise treated the same as soils higher in total nitrogen, will tend to supply only a limited amount of available nitrogen and to produce wheat low in protein.

Gradual Decline in Nitrogen

When the wheatlands of the Great Plains first went under the plow they were highly fertile. The total nitrogen content of the soil was relatively high. Under these conditions the soil produced wheat of high quality because nitrate nitrogen was available in abundance. The virgin fertility has been lost rather rapidly. At the Hays, Colby and Garden City branches of the Kansas Agricultural Experiment Station, the loss of total nitrogen as a result of cultivation has been measured. In every case there has been a decline in the total nitrogen content. The decline was most rapid the first few years after the sod was broken, as indicated in Figure 1. The data shown in Figure 1 represent averages of several plots which have received different treatments during the period. However, for any one plot the treatment was the same throughout most of the period. In 36 years the total nitrogen content of the plots at Hays dropped from 0.228% to 0.124%. Thus, there has been an average loss of about 45% of the original soil nitrogen in the Hays soil during the period. The percentage losses at Colby and Garden City have been about 40 and 30%, respectively, for the period since the virgin sod was broken.

Declines in Other Regions

Analyses made at other points in the United States and Canada indicate similar declines in soil nitrogen and organic matter. Therefore, large losses of nitrogen probably have been common in all wheatland soils throughout the Great Plains. The figure also indicates that the downward trend of the soil nitrogen is continuing but at a less rapid rate than formerly.

It naturally follows that the nitrate nitrogen producing capacity of these soils declined and that with identical conditions the protein content of the wheat would be lower now than when the sod was first broken. There have been certain offsetting factors which have tended to retard the decline in protein. The use of power machinery, making possible earlier preparation of the seedbed, has tended to make more nitrate nitrogen available to the crop than would have been available in a late prepared seedbed. Summer fallowing has resulted in a higher protein level than that found in wheat produced after wheat in spite of the declining nitrogen level of the soils.

The declining fertility level in the semi-arid to sub-humid wheat belt has more serious implications than the similar trend in humid soils. The declining fertility levels of soils can be overcome by the use of barnyard manure, commercial fertilizers, and crop rotations using legumes and grasses. All of these practices are applicable in humid areas but not so applicable in regions of low rainfall. Barnyard manure has not consistently increased the yield of crops in the dry-land region of the Great Plains. Furthermore, manure is not plentiful on most wheat belt farms. Commercial fertilizers have not been found profitable, on the average, except on the eastern, higher rainfall side of the wheat belt. Adapted legumes are rather limited and cannot be expected to play an important part in crop rotations except in the eastern part of the Great Plains.

Perplexing Problem for Producer

Thus the producer in the western wheat belt is faced with the perplexing question of how to offset a declining soil nitrogen level in an area where manure, legumes and commercial fertilizers are not always practical. The search for a practical answer to this question continues, but to date no startling discovery has been made. The complete utilization of all crop residues, the reduction in erosion losses, and the use of summer fallow practice appear to be the nearest approach to a practical answer at present. Possibly the use of nitrogen fertilizers in the western wheat belt may become a profitable practice, but at present its general use is not recommended.

In the eastern and more humid portion of the hard wheat belt the solution of the declining nitrogen level is the use of alfalfa and sweet clover in the rotations, the utilization of barnyard manure, crop residues, etc., the control of erosion and the use of nitrogen fertilizers. Commercial nitrogen fertilizers have been demonstrated to be profitable in many seasons.

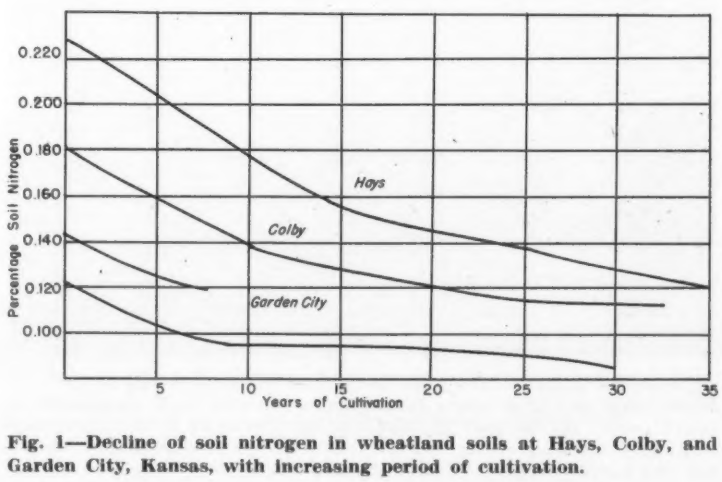


Fig. 1—Decline of soil nitrogen in wheatland soils at Hays, Colby, and Garden City, Kansas, with increasing period of cultivation.

—BREAD IS THE STAFF OF LIFE—

The problem of a steadily declining nitrogen content of wheatland soils poses several questions for the makers and the users of flour alike. Millers will recall that it was necessary in 1944 to revise flour specifications to allow for a lower protein content because of the scarcity of high protein wheats. The protein content of wheat is a major price factor, especially when the crop is uniformly low in protein.

Influence of Bread on Tooth Decay

By Dr. Arne Schulerud

IN the past half century dental caries (or tooth decay) have become a very serious problem, not only due to the disease itself but due to resultant digestive disorders, and it is now in the forefront among diseases influencing the general health of the nation. Historical evidence dating as far back as early Egyptian civilization shows clearly that increased standards of living introduce the problem of dental caries. In these days, deterioration in the teeth seems to go parallel with the industrialization of food production and extended refining methods which remove certain substances originally present in the natural simple foods. The beri-beri epidemic following the introduction of polished rice is a classic example.

It is generally agreed that rapid increase of caries is in a measure due to present-day foods, but the author does not agree that the problem is as simple as some food faddists try to make out.

Often the following argument is heard: When white sugar and white bread become common, caries also become common—quod erat demonstrandum. In the early thirties, a violent campaign was started in Norway against anything to do with white bread, including the common household bread made from a 67% extraction wheat and rye mixture. Films were shown to school children and even a number of dentists joined the campaign, suggesting complete prohibition against household bread.

In order to get the problem thoroughly investigated, the Kristiania Brodfabrik (a large Oslo bakery concern) offered the necessary funds to a commission, the members of which were to be appointed by the Norwegian Medical Association and the Norwegian Dentists' Association, which, in collaboration with the bakery laboratories, should carry out the necessary experiments. The war period introduced serious difficulties due to bread rationing, but each year permission was obtained to manufacture sufficient of the peacetime flour types to enable the investigation to go ahead. The most serious problem was that a number of the commission members were arrested by the Germans or had to escape, but despite all difficulties the work was carried out.

There are many theories about dental caries but principally they can be placed into two groups: The internal, according to which the danger is always present but is kept in check by the general resistance of the body, which should be strengthened by proper foods; and the local which is concerned with the actual condition in the mouth. This latter is built on Miller's chemical-parasitic theory that bacteria act on scraps of food left among the teeth, thus forming acids which attack the enamel.

The influence of different types of bread in the diet was studied at a number of children's homes where the diet was identical except for the bread. The series of tests extended for annual periods, after which the bread-types were switched. Quarterly checks were made of the condition of the teeth.

The behavior of bread in the mouth was investigated with particular reference to three points:

1. Does white bread form acids quicker or in greater quantity?
2. Does white bread stick more to the teeth, so that it remains longer in the mouth, with consequent greater damage?
3. Is it true that coarse bread, because of the bran particles, has a more porous structure and is, therefore, easier dissolved and removed from the teeth by the saliva?

The author describes in detail the various experiments undertaken.

There is no difference, he stated, in the rate of acidification or in the final acidity for different types of bread. It was interesting to note, however, that the final pH varies for different persons but is practically constant for any one individual. There is no evidence that this condition has anything to do with the resistance of the individual against dental caries. Pure sugar solutions showed very poor acid formation. Chocolate and sweets showed an intermediate position, but starchy foods such as various types of bread, potatoes, etc., formed a group with rapid and similar rate of acidification.

The common household bread showed the least tendency of all to stick to the teeth. Six different types of bread were tried and showed the same order of retention for different individuals. The quantity retained varied very much for the different persons, depending on the type of saliva. There was practically no difference between freshly baked and a day old bread.

With regard to point three, no difference was observed between the various bread types.

All the investigations have shown that as far as local conditions in the mouth are concerned, there is no difference between bread types in their influence of the caries problem.

The results from the dietary experiments at the children's homes

(Continued on page 17a)

CHECKERBOARD ELEVATOR CO.
MILLING WHEAT • COARSE GRAINS • MILLFEED
Hard and Soft Winter Wheat
ST. LOUIS • KANSAS CITY • MINNEAPOLIS • DENVER • BUFFALO

DIABLEND
Top Quality
Malted Wheat Flour

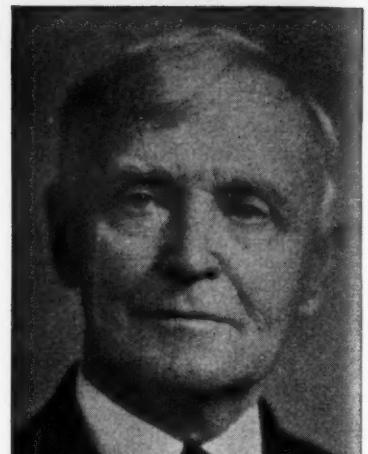
It is essential that your hard wheat flours bake consistently to your established standards. But improper diastatic treatment can spoil your most careful wheat selection and milling methods.

DIABLEND malted wheat flour assures you of uniform quality and quantity of diastatic action. Selected wheat is malted in our own malt plant under automatically controlled atmospheric conditions. DIABLEND is manufactured to a standard level of maltose, milled so it is free flowing for accurate feeding.

We will provide samples for experimental work in your own laboratory, or you may send to us samples of your untreated flours for analysis. Maltose or gassing power analyses in our laboratory are free to DIABLEND users. Ask for a sample and quotation of DIABLEND today.

B. A. ECKHART MILLING CO.
1300 W. CARROLL
CHICAGO, ILLINOIS

Cereal Chemistry for Operative Millers



Dr. C. O. Swanson
Kansas State College

Time and Temperature Factors in Wheat Storage

THE ability of wheat to remain in good condition in storage for fairly long periods of time is one of the characteristics which has made this cereal one of the world's most valued food substances. This possibility of long-time storage is partly due to the comparatively low equilibrium moisture which wheat attains under most climatic conditions where this cereal is grown. However, even at this low moisture, wheat will eventually lose its bread-making qualities.

A Sample of Old Wheat

The influence of time was shown by the deterioration in a sample of wheat stored for some over 20 years in the loft of a granary near Manhattan, Kansas (Swanson, 1937). The wheat appeared normal except for a more than usual amount of bran powder. The odor was that of sound wheat. A germination test gave zero viability. The person in charge of the seed testing thought he was being subjected to a practical joke, as he had never had a sample in which all the kernels were dead. He was told that no joke was intended, but that the experiment was serious and the results of notable scientific value.

In milling, the behavior was like that of a normal wheat except for a somewhat greater brittleness of the bran which caused the flour ash to be higher than from normal wheat. The destructive changes which had taken place were revealed by several tests. The dough handled like that from severely bin-burnt wheat. The usual springiness and elasticity found in dough from normal flour were lacking. No gluten could be washed from the putty-like dough.

The loaf volume obtained was 1,140 cc with a heavy, soggy texture, in comparison with 2,090 cc from a normal flour. The small loaf volume was due to lack of gas retention. The protein would not form the three-dimensional gluten network which forms the gas retaining cell walls in the dough.

This wheat had been stored with the moisture content considered safe for long-time storage and under the fluctuations of outdoor temperatures usual in northeastern Kansas. The container was a tin pail with the usual cover which prevented weevil entrance, but did not exclude air and therefore allowed the normal aerobic respiration. The loss of the power to germinate is due to the fact that the duration of time a wheat kernel (like other living organisms) lives is limited. This time is closely related to the prevailing temperature level. At lower average temperatures this time is longer and at higher average temperature levels it is shorter. Animals, especially the warm-blooded, have a rate of respiration which is fairly constant, and hence the life span is also fairly definite. Any attempt to alter greatly their respiration rate would be fatal. Not so with a wheat seed. As shown in previous articles, the rate may be increased many times by the addition of moisture or increasing the temperature, or both. It may be said of an animal that the number of heart beats are rationed. That is, after so many beats, counted in millions or billions under normal conditions of life, the heart will cease to function. Similarly, after so many respirations in a wheat kernel under normal conditions of temperature and moisture, the life principle which manifests itself in respiration will stop functioning. If this rate is made slow the time of living will be extended, and vice versa. Thus a low temperature together with low moisture are primary conditions for a long life and consequent maintenance of good quality in wheat.

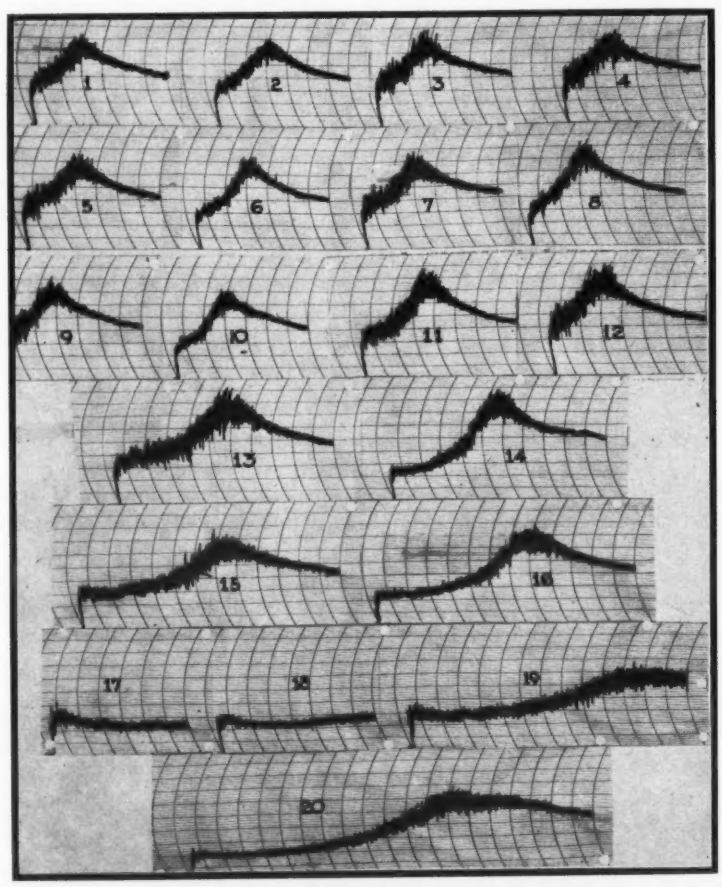


Fig. 1—The mixograms shown above demonstrate the effects of storage temperature upon typical mixogram patterns. Reference should be made to the accompanying key for identification of the mixograms.

Key to Mixograms Shown in Figure 1

No.	Cold Storage Samples H_2O %	Condition of storage
1	Check	Normal
2	Check	Extracted
3	18	Aerated
4	18	Sealed
5	20	Aerated
6	20	Aerated, extracted
7	20	Sealed
8	20	Sealed, extracted

No.	Laboratory Samples	
9	Check	Extracted
10	Check	Aerated
11	15	Aerated
12	15	Sealed
13	16	Aerated
14	16	Aerated, extracted
15	16	Sealed
16	16	Sealed, extracted
17	18	Aerated
18	18	Aerated, extracted
19	18	Sealed
20	18	Sealed, extracted

Comparison With Rice

The duration of time in which wheat may be stored without deterioration of the quality desired for bread making is much more limited than the time that rice may be stored. Experiments in Japan have shown that rice may be stored for 30 years or more in an ordinary bin without any serious deterioration. Rice, however, does not depend for its value on such characteristics as are associated with the gluten in wheat flour dough. This is a fortunate circumstance, since rice is the principal food cereal in warm moist climates where wheat storage for long periods of time would be so difficult as to be impractical.

The Value of Long-Time Storage

Wishful thinking is father to the thought of the possibilities which could follow the storage of wheat in surplus years to be used in times of scarcity such as now. Since wheat is a world crop, supply and demand are governed by conditions which are global. In the early Thirties, the world surplus of wheat was a problem. The price in the Kansas wheat belt once dropped to the tragic low of 26c bu. It hardly paid the farmers to harvest the excellent crops which they had raised. The situation gave rise to advancing the idea of the ever-normal granary. The major problem encountered was in the realm of economics. Comparatively little was said of the preservation of quality. What a boon to the world if that surplus could have been stored to the present time. In the years of abundance, the wheat was used in various ways, some of

which seem so short-sighted now when the world wheat supply is critical. The principles which make long-time storage possible are well understood. The accomplishments and economics are not so simple.

Wheat Stored 11 Years

The possibility of storing wheat a number of years without deterioration has been demonstrated (Swanson, 1939). Wheat which had been stored in an ordinary farm bin in northwest Kansas for 11 years showed no deterioration as far as was revealed by milling and baking tests. Seed planted in the greenhouse produced a stand equivalent to about 55% germination. The moisture in the wheat at the time of removal from the bin was 11% and had probably never been appreciably higher since it was combined in a dry harvest. Aside from the influence of low moisture in the preservation of this wheat was the comparatively cool dry climate of northwest Kansas. Stockham (1920) obtained a viability of 45% in a sample of spring wheat kept in an elevator in North Dakota for nine years. In a previous article it was shown that as long as wheat maintains a fair degree of viability, no serious deterioration in quality has occurred.

Effect of 41° F. Temperature in Preventing Damage in High Moisture Wheat

The influence of time has been stressed in the preceding. In the following the effect of a 41° F. temperature will be shown (Swanson, 1941).

The temperature of 41° F. was chosen for these experiments because it was used in a storage room in which flour samples were preserved for considerable periods of time. Wheat from the season's crop was wetted so as to have moisture contents ranging from 10 to 20%, mostly at 2% intervals. An equivalent number of samples was placed in the laboratory to compare with those placed in the room held at 41° F. Viability tests were made at various intervals. The most significant figures are given in Table 1. At the laboratory temperature, a marked decrease in germination occurred in the 14% moisture sample after 18 weeks' storage. At 16% and 20%, the kernels were dead after 9 and 6 weeks' storage. This is in contrast with the storage at 41° F. where no decrease in germination took place even in the sample which had 20% moisture and stored 21 weeks.

In another experiment, air supply was varied, in addition to varying the moisture content and the temperatures of 41° F. and of the laboratory. The experiment was started the latter part of July, using Tenmarq wheat of the season's crop, and it was planned to have three storage periods, 3, 6 and 9 months. Gallon bottles were used as containers for the 4-lb wheat samples to which were added the amounts of water needed to give the varying moisture contents up to 20%.

For both the laboratory storage and for the cold room there were two sets, based on air supply and three groups of each so as to have one group for each storage period, as shown in Table 2. One set was sealed so that the wheat would be under anaerobic conditions after respiration had consumed the oxygen in the interkernel air space. The bottles in the second set were closed with a one-hole rubber stopper in which was placed a wad of cotton. This would approximate the air supply available to wheat in bins. The check samples had air-dry wheat kept in a tin can with a slip-on cover.

The first group of bottles, as shown in Table 2, were opened and tested during October, the second, during January, and the third the latter part of April. The wheat from each bottle was poured out in a shallow paper box and exposed in the laboratory until the weight was near the same as before wetting which indicated that it was air dry.

The tests made at the end of each period included: examination for soundness as revealed by mold, mustiness and odor; and approximate viability. Milling and baking tests were made on the three- and six-month samples. (The 9 months' sample were accidentally discarded.)

Examination for Soundness

The examination for soundness included appearance and odor, with the results given in Table 2. The weakness of such examinations is that it is based on impressions on the senses and the difficulty of finding words that adequately express what is revealed. With experience, however, the damaged samples are readily differentiated from the sound or undamaged. This examination does not differentiate degrees of damage. This must be done by more accurate tests.

When air had access, unsoundness was shown as mustiness or mold. At the 41° F. temperature, these characteristics were detected first in the grain having moisture contents of 18 and 20%, while in the laboratory it started at 15% moisture. In the sealed samples the unsoundness appeared as a sour odor and little

The **ST. LOUIS PLANT**
— is fully equipped, including a complete department for roll grinding and corrugating.

ESSMUELLER COMPANY
SAINT LOUIS
NO.
KANSAS CITY
THE
1878
1946

Our reputation for precision work and dependable service, especially in emergencies, has remained consistent for 67 years—that's why so many Millers invariably say—"Essmueller Can Do It". And today, in face of unpredictable changes, we still say—"we are geared to meet your demands" and to that end, we invite your inquiries.

IN KANSAS CITY
you'll find an equally well-equipped and stocked Essmueller plant.

The **ESSMUELLER** *Company*

ST. LOUIS 4, MISSOURI KANSAS CITY 1, MISSOURI

"As Dependable as it is British."

CANMORE BRAND

PURE
SILK BOLTING CLOTH
AND GRIT GAUZE

THE NAME OF CANMORE STAMPED ON SILK BOLTING CLOTH AND GRIT GAUZE IS A GUARANTEE OF A BRITISH PRODUCTION FROM PURE SILK OF THE FINEST QUALITY AVAILABLE AT PRESENT.

THIS BOLTING CLOTH IS WOVEN IN SCOTLAND UNDER THE SUPERVISION OF SWISS TECHNICIANS.

TELEPHONE ROCHDALE 2167 TELEGRAMS Robinson Rochdale

THOMAS Robinson & SON LTD

ROCHDALE ENGLAND

LONDON OFFICE AERICA HOUSE KINGSWAY W.C.2 Temple Bar. 2356

Table 2—Effects of storage temperature upon wheat samples containing different percentages of moisture

Sample description		Condition of wheat at the end of 3 months	6 months	9 months
		Stored at 41° F.		
Air	moisture %			
Air	Check	Sound	Sound	Sound
Air	12	Sound	Sound	Sound
Air	14	Sound	Sound	Sound
Air	15	Sound	Sound	Sound
Air	16	Sound	Sound	Sound
Air	18	Musty	Slight sour odor	Musty
Air	20	Slight moldy	Slight moldy	Musty
Sealed	12	Sound	Sound	Sound
Sealed	14	Sound	Sound	Sound
Sealed	15	Sound	Sound	Sour odor
Sealed	16	Sound	Sound	Sour odor
Sealed	18	Sound	Slight sour odor	Sour odor
Sealed	20	Slight musty	Sweet	Sour odor
		Stored in the laboratory		
Air	Check	Sound	Sound	Sound
Air	12	Sound	Sound	Sound
Air	14	Sound	Sound	Sound
Air	15	Slight musty	Slight musty	Slight musty
Air	16	Musty	Musty	Very moldy
Air	18	Very moldy	Very moldy	Very moldy
Sealed	12	Sound	Sound	Sound
Sealed	14	Sound	Sound	Sound
Sealed	15	Sound	Sound	Sound
Sealed	16	Sound	Sweet odor	Sour odor
Sealed	18	Slight musty	Sweet-sour	Very sour

difference was shown between the laboratory and 41° F. storage samples. The "slight musty" of the 18% and 20% moisture, 3 months, probably was due to air leaks, since there was no mustiness at the end of 6 and 9 months. At the 41° F. temperature the sourness started with the 18% moisture at 6 months and with 15% at 9 months.

Flour Yield and Ash Content

Milling of samples was done on a Buhler experimental mill, with a constant roll setting. The flour yields in percentages did not show any definite trends in relation to moisture contents of wheat while in storage. There were not any definite differences between the laboratory samples and the 41° F. storage samples. There was a trend towards an increase in ash for the higher moisture samples. This trend was greater for the samples stored in the laboratory, due to mold development,

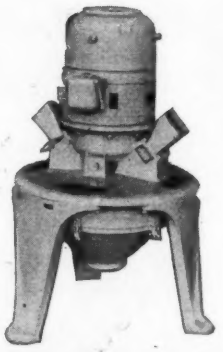
A. E. BAXTER ENGINEERING CO.
Designers and Engineers for Mills, Elevators and Feed Mills
344 DELAWARE AVENUE BUFFALO, NEW YORK

JONES-HETTELSATER CONSTRUCTION CO.
Designers and Builders for Milling Companies
1012 Baltimore Ave. KANSAS CITY 6, MISSOURI

MILL COGS
We make ALL kinds. Specialize in "Ready Dressed" cogs which are READY TO RUN the moment driven and keyed. Write for circular "DW" and instruction sheets free.
The N. P. Bowsher Co., South Bend, Ind.

ANALYSES
FLOUR - FEED - MEAL
PROMPT & ACCURATE LABORATORY SERVICE
THE MIDWEST LABORATORIES, INC.

Millers Are Extending "ENTOLETER" Applications for Continuous Insect Control



"ENTOLETER" shown above handles 75 barrels per hour. Others available to handle 10, 25 or 50 barrels per hour.

More and more millers are extending "ENTOLETER" Continuous Insect Control throughout their plants. The remarkable benefits obtained through the operation of one or two "ENTOLETERS" in a mill are the most compelling reason for extending this protection to all key streams.

While all good housekeeping practices are important, the final **essential** safeguard is to make certain that no insect life is present in raw materials, in blending stocks and in the finished product before packaging. This calls for **continuous** control, applied as part of the processing operations.

Write today for bulletin, describing "ENTOLETER" applications. Includes plant layout and table of estimated costs for continuous protection. Entoleter Division, The Safety Car Heating and Lighting Company, Inc., 1181 Dixwell Avenue, New Haven 4, Connecticut.

ENTOLETER
INFESTATION DESTROYER
REG. U. S. PAT. OFF.
CONTINUOUS INSECT CONTROL SYSTEM

Here are Nine Helps to Better Packaging

The Bemis products shown on this page are a few of those with which we have served the milling industry for many years. The next time you need bags, bag closing supplies, or help with a packaging problem, call Bemis.

Bemis Band-Label Bags provide a colorful display of your brand on the front, back and sides of Bemilin dress-print bags. The Band-Label is easily removed by soaking.

Bemis Cotton Bags are made from quality materials by expert workmen. Three Bemis mills make cloth especially for Bemis Cotton Bags, a further assurance of quality.

Bemis Burlap Bags are sewn with the Bemis close-stitch. Quality thread insures seams stronger than the burlap itself. Colorful printing makes your brand stand out.

Bemis Paper Bags are produced in plants strategically located to insure prompt delivery anywhere. A Bemis mill makes extra quality paper for Bemis flour bags.

Bemis Deltaseal Bags give you an attractive package retailers will feature in counter and floor displays. Housewives prefer Deltaseal. Sizes up to 25 pounds. Closed on machines designed by Bemis.

Bemis Multiwall Paper Shipping Sacks are tough, siftproof and will withstand rough handling. Produced with typical Bemis rigid control of quality. Plants conveniently located to serve you.

Bemis A's are tough, long-lasting, non-raveling cotton seamless bags. They are economical because they make many round trips between the flour mill and the bakery.

Bemis Waterproof Bags are ideal for export or domestic shipment of special flours. They are puncture-resistant, tear-resistant, grease-resistant, insectproof, siftproof, odorproof, and moistureproof.

Bemis Bag Closing Twine and Thread. Mainstay Twine, soft, easy-to-work, speeds up hand closing. Bemis Special Thread, knotless and kinkless, speeds up machine closing, gives maximum yardage per pound.

Bemis Bags

BEMIS BRO BAG COMPANY

BEMIS BRO. BAG CO.

Baltimore • Boston • Brooklyn • Buffalo • Charlotte • Chicago • Denver • Detroit
East Pepperell • Houston • Indianapolis • Kansas City • Los Angeles • Louisville • Memphis
Minneapolis • Mobile • New Orleans • New York City • Norfolk • Oklahoma City • Omaha
Peoria • St. Helens, Ore. • St. Louis • Salina • Salt Lake City • San Francisco • Seattle
Wichita • Wilmington, Calif.

Reputation

The quality reputation of your flours is mighty important to you and nothing will harm it quicker than improper diastatic balance. It pays to watch these values carefully. You can rely on our

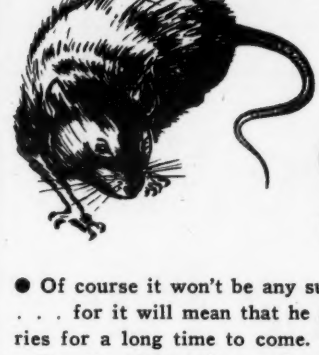
FULL STRENGTH MALTED WHEAT FLOUR

It is the standard of quality for the milling industry—backed by years of experience and technical "know how."

☆ ☆

The Kansas Milling Company

WICHITA KANSAS



Wish Him

A MERRY CHRISTMAS

The LARVACIDE *Way*

● Of course it won't be any such joyous occasion as you and we anticipate . . . for it will mean that he and his progeny will be off your list of worries for a long time to come. ● In space reasonably tight, you can expect a literally 100% kill over Saturday night. ● And Larvacide is easy to use, requires only light dosage for rodents, and is safer because it warns of its presence.

...and don't let the bugs celebrate in your grain

Larvacide affords the most economical (as well as effective) grain treatment we know of: only $1.50 to $1.70 per thousand bushels, in closed concrete storage.

Larvacide —a tear gas fumigant, is shipped in liquid form in cylinders of 25, 50, 100 and 180 lbs., and very handy 1-lb. Dispenser Bottles, fine for rodent and other small jobs. Bottles are put up a dozen to wooden case, each bottle in sealed, safety can. Stocked in principal cities. Write for Folder MP-12.

INNIS, SPEIDEN & CO., 117 Liberty St., New York 6, N. Y.

BOSTON • CHICAGO • CINCINNATI • CLEVELAND • OMAHA • PHILADELPHIA

Canadian Distributors: STRONG-SCOTT MFG. CO., Ltd., TORONTO • WINNIPEG • CALGARY

INNIS, SPEIDEN & CO., 117 Liberty St., New York 6
Please send booklet MP-12 on BETTER PEST CONTROL

Company .....

Address .....

Attention of .....

DUST IS DYNAMITE!

It Must Be Handled With Care

Dust can be controlled. Engineering service is a part of Mill Mutual Insurance and our dust control bulletins and engineering data are offered without obligation to the milling and grain trade.

MILL MUTUAL FIRE PREVENTION BUREAU

400 WEST MADISON STREET CHICAGO 6, ILLINOIS

FULTON'S 75th ANNIVERSARY

MAKING FINE BAGS

The high quality of FULTON FLOUR BAGS plus Fulton's superior printing and attractive designs increase the eye appeal of your bags. Also, special premium packages with added sales value.

Write our nearest plant

Fulton Bag & Cotton Mills

Manufacturers Since 1870

ATLANTA ST. LOUIS DALLAS MINNEAPOLIS
NEW YORK NEW ORLEANS DENVER KANSAS CITY, KAN.

than for the samples stored at 41° F. in which mold growth did not take place.

Effects on Baking

Baking tests were made on the flours obtained from milling at the end of three and six months' storage, using the following formula:

Flour	100 g.	Salt	1.5 g.
Yeast	2 g.	Shortening	3 g.
Sugar	6 g.	Potassium bromate	1 mg.

The effects of storage conditions were judged by loaf volume, baking score and odor of dough in comparison with the checks. A number of the samples to which water had been added gave better results than the checks, especially those stored in the cold for six months. None of the samples stored at 41° F. had lower values than the checks either in loaf volume or baking score; there was not any perceptible odor in the dough. This indicated no damage to baking values even at 18 and 20% moisture after six months' storage at 41° F.

A proximate germination test was made on these samples after the various periods of storage. None of the samples stored at 41° F. were dead. A few of the higher moisture samples that had access to air were rated fair in viability, and all the sealed samples rated good. All the laboratory air access samples of 15% moisture and higher were dead at six months and nine months. The same was true for the 16% and higher moisture samples that were sealed.

The following six laboratory-stored samples had distinctly smaller loaf volumes and lower baking scores than the checks:

Three months Moisture		Six months Moisture	
%		%	
18	air access	16	air access
18	sealed	18	air access
		16	sealed
		18	sealed

A comparison with the results of viability test showed that these wheat samples were all dead.

The following samples of flour from dead wheat gave results about equal to the checks:

Three months Moisture		Six months Moisture	
%		%	
16	air access	15	sealed
16	sealed	15	air access

These were next the samples which had fair or good viability. Thus if the viability is zero, the damage may be slight or severe. Good viability is an indicator that no serious damage has occurred.

A mixogram gives a record of the behavoir of dough under continuous mixing. Three main characteristics are: Time, in minutes, and fractions required to reach the peak of the curve or the point of optimum mixing; height of this peak in terms of the recording chart; and slope or pattern of the curve beyond the peak. Gluten is the main substance in flour which determines these characteristics. A change in gluten properties caused by protein denaturation would therefore be shown in the change of mixogram or curve characteristics in comparison with the check. Fatty substances are also altered under storage conditions so as to affect gluten quality (Kozmin, 1935).

Several of these flours were extracted with petroleum ether for six days in a large automatic extractor and then exposed to allow the ether to evaporate.

Mixograms made from representative six-months' storage samples of both extracted and unextracted flours including both those stored at 41° F. and in the laboratory are shown in Fig. 1. The two upper rows of mixograms are from the wheat samples stored at 41° F. and the rest from those stored in the laboratory. The moisture percentages of the wheat during storage and other details of conditions are given in the legend for Fig. 1.

Storage at 41° F., even at 18 and 20% moisture produced no marked change and the patterns were essentially the same in the extracted as in those not extracted. The mixograms from the samples stored in the laboratory show distinctly the effects of varying conditions. Mixograms 11 and 12 from the samples having 15% moisture during storage show the beginning of those changes which were made much more distinct when the moisture content was 16% and higher. The extraction with ether had no effect which might not be due to variation in absorption. Hence the marked changes shown in patterns starting with mixogram No. 13, were clearly due to denaturation of the protein, caused by storing at high moisture and temperature.

LITERATURE CITED

Kozmin, Natalie B., 1935—The aging of wheat flour and the nature of the process. Cereal Chem. 12:165-171.

Stockham, W. L., 1920—Some factors related to the quality of wheat and the strength of flour. North Dakota Agr. Experiment Station Bulletin 139.

Swanson, A. F., 1939—Long time storage of winter wheat. Journal American Soc. Agron. 31:896-97.

Swanson, C. O., 1937—Wheat and flour quality. Burgess Pub. Co., Minneapolis, Minn.

————, 1941—The effect of low temperature in preventing damage to wheat stored with high moisture content. Cereal Chem. 18:299-315.

Table 1—Comparing the rates of decrease in viability of samples kept at 41° F. with those kept at laboratory temperatures.

	Laboratory		Kept at 41° F.	
Moisture	Weeks old	Germination	Weeks old	Germination
%		%		%
10	18	92	18	91
12	18	94	18	92
14	18	51	18	93
16	9	0	21	91
18	6	1	21	88
20	6	0	21	90

137 YOUNG MILLERS *can't be* WRONG...

SINCE the end of the war and the resumption of peacetime activities in this country, 137 young millers have enrolled in the Correspondence Course in Practical Milling, offered jointly by the Dunwoody Industrial Institute and this journal.

Those 137 young millers can't be wrong in their decision to prepare themselves for advancement in their chosen craft. The "breaks" are going to come their way some day and they're going to be prepared to take advantage of the opportunity for advancement.

Milling is purely a mechanical procedure, but the successful operative miller in these modern times must know a great deal about the broad science of physics, which embraces both mechanics and the chemical and physical phenomena having to do with grains from the time they begin their growth until they have undergone storage and processing and their products have been delivered into the hands of the users.

Those millers who are best qualified by experience and knowledge are the men who are stepping into higher-paying jobs. Equip yourself with the added knowledge a better paying job demands. Investigate the Correspondence Course in Practical Milling, offered jointly by the publishers of this journal and the Dunwoody Industrial Institute. Prepare yourself for the breaks. Write for particulars today.

Dunwoody **INDUSTRIAL INSTITUTE**
816 Wayzata Boulevard Minneapolis, Minn.

How Deep Is a Well?

THERE is an old saying to the effect that you cannot tell the depth of a well by the length of the handle on the pump.

Neither can you determine the actual replacement value of flour or feed mill machinery and equipment solely by its appearance. Other factors enter into evaluation studies.

Appraising cereal processing machinery, equipment and buildings is our business. Our appraisal engineers are trained men with years of experience—Our list of long-satisfied customers is proof of the accuracy, thoroughness and reliability of our work.

Appraisal Service Company, Inc.
Minneapolis, Minn.
★ *Appraisers to the Milling and Grain Trade* ★

Four Generations of Millers

(Continued from page 1a)

I suppose." As his grandfather did, Otto Foland learned the milling craft by helping around the mill in the family home town of Carthage, Mo. When he was old enough to be taken on as an apprentice, at the age of 16, he became a sweeper, the first step in learning the trade. His first employer was the Cowgill Flour Mill in Carthage. For 25 years he worked for the firm, most of that time under James Webb as superintendent. He also worked at the Finke Mill at Carthage and at other mills in Webb City, Mo., and at the Dunwoody Mill in Joplin, Mo. When the Cowgill Mill closed in 1942 he moved his family to St. Louis where the elder Foland went to work for Valier and Spies.

Today, at 57, he is as enthusiastic about the milling business as when he started at 16. Some day he plans to retire and intends to return to the family home in Carthage to spend his time teaching his grandson, Larry, the family trade of milling. He will tell him how the boy's great-great grandfather was a miller, and his grandfather (Mr. Foland's father) came from Indiana and settled in Carthage where he worked in the same mills that Otto Foland worked in.

Two of Otto Foland's brothers were millers. Ollie, 67, lives in Carthage now that he is retired at Old Forest Mills, which used to be a mill. Another brother, the late Bernie Ellsworth, was a miller in mills at Carthage, Webb City and other towns in Southwest Missouri.

Otto Foland's son, Curtis E. Foland, came to work for Valier and Spies last January. He is employed as a spouter. Classified as a second miller, he is awaiting an opening in that division so that he can work in his field as a second miller.

Ever since he was in high school,

LABORATORY SERVICE
Exclusively a Cereal Consulting and Control Laboratory for the Flour, Feed and Grain Industries.
ST. JOSEPH TESTING LABORATORIES, Inc.
Corby Bldg. St. Joseph, Mo.

PAPER SACKS FOR MILLERS
The Chatfield & Woods Sack Co.
CINCINNATI, O.

THESE DOUBLE TROUBLES GOT YOU BACKED IN A CORNER?

HOFFMAN DUST REMOVAL EQUIPMENT IS SOLVING THESE PROBLEMS

Cleaning out mill stock by vacuum before or after fumigation, from sifters, conveyors and other machines actually removes infested material. Dead spouts are a serious source of infestation. Regular cleaning of your mill by Hoffman vacuum equipment is a further protection against infestation. It will do much to reduce the dust explosion hazard. Many mills have so found it. Let us send you the story.

CONVEYORS . . . BEFORE AND AFTER CLEANING

U. S. HOFFMAN MACHINERY CORPORATION
AIR APPLIANCE DIVISION, 100 E. 12TH ST., NEW YORK 3, N. Y.

COTTON BAGS BURLAP
Specially Manufactured for
MIXED FEED MANUFACTURERS and FLOUR MILLERS
CENTRAL BAG & BURLAP CO.
IMPORTERS AND MANUFACTURERS
OFFICE AND FACTORY: 4513-4525 SOUTH WESTERN BLVD.
CHICAGO

Flour Exchange The J. K. HOWIE CO. Minneapolis, Minn.
SOLE DISTRIBUTOR IN THE NORTHWEST FOR
GREENING WIRE CLOTH
PROMPT SERVICE and SATISFACTION GUARANTEED

Going
Going
Gone!
CHASE LABEL ON EVERY BAG!
To remove ink from this bag soak in rich soap suds over night, wash thoroughly in warm suds rubbing the part heavily covered with ink. If any traces of ink remain after this treatment boil in suds for ten minutes.

CHASE Washout Inks!

The trend today is toward the conservation of food and materials. That's why so many thousands of housewives are finding so many practical uses for Chase Bags. That's why famous national magazines and newspapers are featuring the use of bags for smart dresses and accessories. Chase Washout Inks are bright, attractive, sharp—yet wash out quickly and easily. The 100-pound flour bag simply requires laundering—and presto!—it's a pillow case. Small bags make attractive, thrifty, usable accessories. All sizes may be sewn together for spreads, draperies, etc. Your customers will be pleased with their cloth premium, when your bags are printed with Chase Washout Inks.

"Bag Magic for Home Sewing"—Send for your free copy. National Cotton Council, P.O. Box 18, Dept. C-1, Memphis 1, Tenn.

FOR BETTER BAGS—BETTER BUY CHASE

CHASE BAG CO.

GENERAL SALES OFFICES, 309 WEST JACKSON BLVD., CHICAGO 6, ILLINOIS

COAST-TO-COAST SERVICE—BAGS OF ALL KINDS

BOISE • DALLAS • TOLEDO • DENVER • DETROIT • MEMPHIS
BUFFALO • ST. LOUIS • NEW YORK • CLEVELAND • MILWAUKEE
PITTSBURGH • KANSAS CITY • MINNEAPOLIS • GOSHEN, IND.
PHILADELPHIA • NEW ORLEANS • ORLANDO, FLA. • SALT LAKE CITY
OKLAHOMA CITY • PORTLAND, ORE. • REIDSVILLE, N. C. • HARLINGEN, TEXAS • CHAGRIN FALLS, O. • HUTCHINSON, KAN. • CROSSETT, ARK.

Fine enough to Pass Through the Eye of a Needle

"VEXTRAM's" uniformly fine granulation and free-flowing characteristics not only aid sifting, but minimize risk of nutrients being scalped-off in rebolt sifters, and give better dispersion in the flour.

VEXTRAM
REG. U.S. PAT. OFF.
WINTHROP'S BRAND OF FLOUR-ENRICHMENT MIXTURE
PATENT APPLIED FOR

OFFERS THESE PLUS ADVANTAGES

1. **Minimum increase of ash content of flour.**
2. **pH control assures stability—minimum vitamin potency loss.**
3. **Freer flowing—better feeding—better dispersion.**
4. **Uniform particle size of ingredients and carriers.**

You will like "VEXTRAM"! It flows evenly. Disperses quickly. And it does not hang up in the feeder!

Because of the type of filler used and uniformly fine particle size, "VEXTRAM" is free-flowing, disperses evenly, and when properly added provides *uniform* enrichment of white flour to required potency levels.

"VEXTRAM" economically supplies all required nutrients in accurately controlled, pre-mixed form,—in a carrier* which keeps mineral additions at a minimum (low ash), and at the same time assures easier sifting and less chance for nutrients to be scalped-off in the rebolt sifters. All "VEXTRAM" ingredients are food grade! No "VEXTRAM" formula contains less nutrients than the minimum recommendations of the Technical Committee of the Millers' National Federation.

Consult our Technically-Trained Field Representatives on matters pertaining to *Enrichment* or *Bleaching*.

*Combination of starch base carriers developed and first used by the Winthrop Chemical Company, Inc. (Patent Applied For.)

Address Inquiries to—
Special Markets Division
WINTHROP CHEMICAL COMPANY, INC.
170 Varick Street, New York 13, N.Y.

STOCKED FOR QUICK DELIVERY AT NEW YORK, CHICAGO, KANSAS CITY (MO.), DENVER, LOS ANGELES, SAN FRANCISCO, PORTLAND, (ORE.), DALLAS AND ATLANTA

Heading the *RIGHT* way!

A trial will Convince you... ORDER "OXYLITE" *TODAY*

Oxylite Offers These Advantages:

MORE EFFICIENT COLOR REMOVAL due to New Manufacturing Process *(patent applied for)*	EXCELLENT BLEACHING POWER Tested and Proved in Laboratory and Mill
Flour Mills throughout the U. S. A. who have used "Oxylite", report it to be all we claimed for it— MORE EFFICIENT COLOR REMOVAL!	*Compare Flour Bleached with "Oxylite"* FOR PROOF OF WHITER FLOUR

MILLERS have given "Oxylite" the "go-ahead". Introduced to the trade only a short while ago, its acceptance has been nationwide. Oxylite is *right* in every way: *Right* product, *right* formula, *right* manufacturing process—the finished product of an organization thoroughly experienced in the synthesis of organic chemicals.

- ***Consult our Technically Trained Representatives on Bleaching and Enrichment.***
- ***Use "Oxylite" in your present equipment—no changes in procedure necessary!***

WINTHROP

Special Markets Division
WINTHROP CHEMICAL COMPANY, INC.
170 Varick Street, New York 13, N. Y.

"OXYLITE" IS STOCKED FOR QUICK DELIVERY AT NEW YORK, MINNEAPOLIS, CHICAGO, CINCINNATI, KANSAS CITY (MO.), DENVER, SAN FRANCISCO, PORTLAND (ORE.), DALLAS, ATLANTA

Curtis knew that he wanted to follow his father's trade of milling. After school hours he learned by watching millers at work in the Carthage mills. "I was just so interested I couldn't wait until I was old enough to learn the trade," he explained.

"With my father and grandfather following the trade of millers, I just naturally followed in their foosteps. And now I'm happy that Dad and I can work here together for Valier and Spies."

When he was graduated from the Carthage High School in 1937, Curtis, who is 27 years old, started to work for the mill there as a sweeper. "I started in at the bottom to learn the trade," he remarked. "From the job of sweeper, I was promoted to oiler on machinery and then I became a roll tender. Before I went into service I had the rating of second miller, a job I hope to have here at Valier and Spies when there is an opening."

He worked for the Cowgill mill for three years before he came to St. Louis with his father. Curtis served in the navy two years as a carpenter's mate—"a far cry from second miller," he remarked. "My navy experience was good for me, though, and I did get to see some of the world."

After his boot camp training at Houston, Texas, he was sent directly to the Pacific. He was stationed in Hawaii, the Marshall Islands, and in the Philippines.

Mrs. Foland Joins Trade

In August, 1943, after the family had settled in St. Louis in a home at 5036 Shreve Avenue, Mrs. Otto Foland joined the family trade and became a miller, too. In response to a request from Valier and Spies for women to replace men workers who had gone into service, Mrs. Foland went to work for the firm in the "pancake room," a part of the cereal department.

She began her apprenticeship the day she started and soon was put on a wrapping machine, cutting the cardboard boxes for the pancake flour. Proud of the family tradition she is carrying on, Mrs. Foland declared she was grateful for the chance to do her small part in the war effort by going to work at a job formerly held by a man. Now that the war is over, she is continuing her work and managing to keep house, too. "It's hard to manage two jobs," she remarked, "but I like my work. Some day when my husband feels he wants to retire, we will quit and go back home. Then Curtis and Larry will be left to carry on the family tradition."

Celebrate Wedding Anniversary

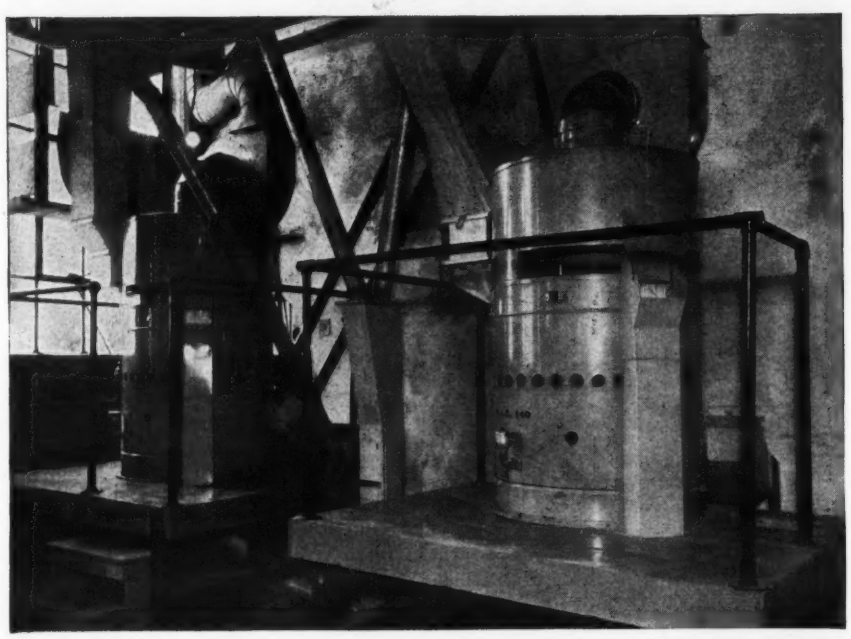
On Nov. 21 she and Mr. Foland celebrated their 36th wedding anniversary. "We did not plan any special celebration," she said. "We're just grateful that we've been happy all these years since we were married in Carthage."

The Folands have another son, Kelso, who is a druggist in Carthage, and a daughter, Mrs. George Lee, who lives in Carthage.

The Valier & Spies Milling Company, where all three Folands are employed, is one of the six larger flour mills in the country, with a daily capacity 8,400 sacks of wheat flour.

Founded 70 years ago by a father and his son-in-law, Valier and Spies first was located in St. Jacob and then in Marine, Ill., later moving to St. Louis where the huge mills are a familiar part of the landscape in North St. Louis.

The firm is a member of the Flour Mills of America, an organization which carries on the fine tradition of the country's leading millers, as the Folands are doing in the training of skilled craftsmen within the family system.



Two No. 30 HAAKY Sealed Flow ASPIRATORS used ahead of the grinding bins of 2,500-bbl. unit in a Buffalo, N. Y., mill.

Haaky gives You COMPLETE UNIFORM ASPIRATION

Also provides a light polishing action. The screenings are ejected from the settling chamber and dust, chaff, etc., are blown to a dust collector. So thorough and dependable is the proved HAAKY method that the Sealed Flow Aspirator is steadily replacing other types in mills throughout the United States and Canada.

HAAKY Efficiency is due to the patented HAAKY Floating Unit Control which provides a uniform and automatically spread circle of grain passing to aspiration, the circumambient method of air distribution and the specially designed fan. An efficient separation in the settling chamber keeps screenings from entering dust collector stocks. Automatic release, no choking.

LOWER OPERATING COSTS, TOO! HAAKY uses only 40% to 60% of the air volume required by other types. Compact design saves space.

HAAKY SEPARATORS and SCOURERS also employ this same patented method of aspiration. Write for the *new* HAAKY catalog.

HAAKY MANUFACTURING CO. 513 VANDALIA ST. ST. PAUL 4, MINN.

ASPIRATORS • SEPARATORS • SCOURERS • SCALPERS

Perennial Wheat

RUSSIA is eager to obtain information from the Western Powers but reluctant to share its own discoveries. It is natural, therefore, that we should accept what appears to be extravagant claims about perennial wheat with a certain amount of reserve.

We do not scoff at the claim that the perennial couchgrass has been crossed with the annual wheat plant —we have witnessed too many remarkable discoveries to make that mistake; but we would like to know more about it and, if the claim is justified, to suggest that Russia owes to the world as much as it gets out of it, and that is not inconsiderable.

We need not bind ourselves either way, but obviously a successful perennial wheat plant, even if it did not increase the present average yield of wheat per acre, would increase the aggregate wheat production enormously. In such a case, the price of flour and bread would be reduced and because of a plentiful and cheap supply of wheatfeed the price of meat and dairy produce also would be reduced. The contemplation of such a vision is not unpleasing, but in the absence of more reliable information, we are restrained from indulging it too far. It is a case where we have no alternative but to await further information from Russia, and if she gives us in any way equal to what she demands, it would fulfill all reasonable requirements.—Milling.

Bread and Tooth Decay

(Continued from page 5a)

have fully confirmed this. On account of the difficulties previously mentioned, it has not been possible to complete the statistical analysis of the wealth of data available, but the general trend is quite clear.

After this investigation, it is tempting to consider if anything definite is known about the primary cause of caries and the possibility of finding an effective remedy. After describing in detail the construction of a tooth and the beginning of the disease with de-calcification of a spot on the enamel, the author mentioned that extensive studies on groups of people who are free from caries have not given an answer to the problem. It is certainly not an inheritance factor, because if these people are transferred and have changes in food they are just as susceptive as others. On the other hand, one finds in civilized communities isolated individuals who are immune, regardless of their mode of living.

There seem to be two possibilities:

1. The body when obtaining correct foods develops some protective substance.

2. Caries is due to a direct attack from one or more bacteria which find good conditions in civilized and poor conditions in primitive foods. The few people in a civilized community who are free from caries must, then, be assumed to be immune against these bacteria.

A great amount of work has been done on the different vitamins, calcium, phosphorus and a mixture of these in different proportions, and whilst generally some improvement can be shown, the only conclusion that can be drawn is that the general resistance of the body is of some importance. On the other hand, certain primitive peoples living for long periods in a state of starvation are still free from caries. Therefore, it seems likely that the formation of a protective substance in the body is only of secondary importance.

It would appear likely that the attack on the enamel is due to organic acids which are formed by bacterial action on food particles left in the mouth. Fats and proteins do not give acid products, so that one must look to the carbohydrates and particularly those containing starch, since sugars are readily dissolved and are rinsed away with the saliva. Bunting has shown that there is a high positive correlation between the frequency of caries and the presence of B. acidofilus. Bunting has also shown that this bacteria is present only when there is a regular intake of sugar. If we assume that B. acidofilus is responsible for caries, the consistency of the food becomes of great importance, since it is necessary that food particles be left in the mouth. Peoples obtaining their carbohydrates from porridge, gruel or other boiled soft cereals have been noted to be free from caries.

In all civilized communities, bread and sugar form an important part of the daily food, and it seems possible that this combination is reponsible for the prevalence of caries. This would explain the very great decrease in caries during the war years in Norway, when the sugar ration was only 200 grams per week.

What attitude should the cereal chemist take to this problem? Obviously neither bread nor sugar can be banished from our food. The investigations into the immunity question have not yet been crowned with success but perhaps one day we may be inoculated against caries. In the meantime, the cereal chemist can contribute by making the bread as good as possible and the addition of vitamins is undoubtedly a step in the right direction.

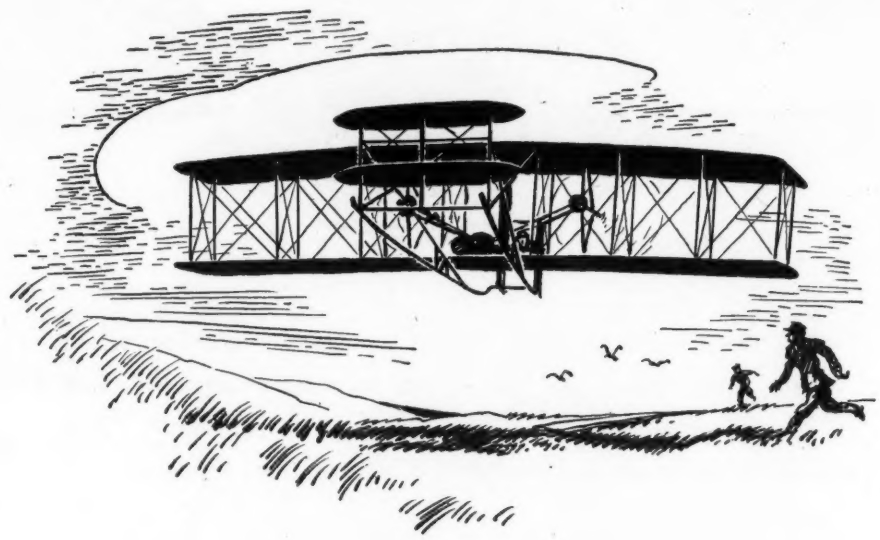
During the war, interesting experiments have been made in America with fluorine, based on the observation that certain communities where the drinking water contained this element were practically free from caries. The quantity is quite critical and overdose has undesirable results. It is now suggested that fluorine should be added to drinking water. It is possible that fluorine affects the bacteria, so why not try to add it to bread, which comes in much more intimate contact with the teeth?

In conclusion, it should be stated that the investigations made show that in relation to caries white bread is not in any way more detrimental than wholemeal bread. The only time when possibly wholemeal bread may have an advantage is in making up for certain deficiencies but the addition of vitamins to flour will make this of less importance.

There is evidence to show that the combination of bread and sugar has some connection with the development of caries through furthering the growth of the organisms that cause the disease. A well-baked bread, enrichment of the flour through the addition of vitamins, and selection of the correct types of hard bread, should be the contribution of the cereal chemist in the fight against dental caries.

Editor's Note.—The above article is the text of an address that was made by Dr. Schulerud at a recent conference of cereal chemists in Stockholm, Sweden.

★ FAMOUS NAMES IN INDUSTRY ★



THE WRIGHT BROTHERS

On December 17th, 1903, at Kitty Hawk, North Carolina, the Wright Brothers made the first successful flight in a motor-powered airplane . . . traveled 852 feet and stayed in the air just 59 seconds. This past year an airplane made a non-stop flight of more than 11,000 miles, half way 'round the world.

Today the name Wright is honored the world over.

And wherever fine flour is processed, Swiss Silk has the same respect, for both stand for highest achievement in their respective fields. You can't buy better bolting cloth.

Specify SWISS SILK

BODMER
DUFOUR
EXCELSIOR
SCHINDLER
WYDLER

Maintenance Now!

SAVE MACHINERY BY PROPER LUBRICATION

By Ernest W. Fair

DOLLARS can be wasted if basic lubrication fundamentals are not understood and applied. The basic need for lubrication arises from friction which occurs when one body moves across the surface of another, thus creating a resistance to force. Since it always slows up, deters or prevents motion wherever gears, bearings or other machine parts operate, the use of lubricants is necessary on the spot of contact.

In machinery use there are two main divisions of the laws of friction. Each requires special handling from the lubrication standpoint. One is boundary friction, which occurs between perfectly clean, dry, solid surfaces, or thin-film friction, which occurs between solid surfaces partially or completely separated by a film of fluid so thin that it can hardly be defined. The other is fluid friction, which includes all cases of frictional resistance between solid surfaces completely separated by a film of fluid of sufficient thickness to conform to the laws of fluid flow.

Conditions of true dry friction seldom occur. When a pair of lubricated surfaces are forced together by a heavy load, the pressure tends to expel the lubricant from between the surfaces. Experiments have shown that it is extremely difficult to expel this lubricant completely.

Scientists have shown that in thin film friction, the boundary film formed by a lubricant on a solid surface has a frictional value that depends on the chemical nature of both the metal and the lubricant. It has been known for many years that animal and vegetable oils possess some desired lubricating properties not possessed by mineral oils, i.e., they will adhere more tenaciously to metal surfaces than mineral oils, but they do lack chemical stability.

When conditions of thick-film friction occur, the frictional resistance is no longer affected by the chemical constitution of the lubricant or the nature of the solid surfaces, but is influenced only by the internal friction of the lubricant itself, which is proportional to the viscosity of the lubricant. Viscosity is the only property of a lubricant on which fluid friction depends.

Viscosity is the property that determines the bearing friction, temperature rise, rate of oil flow through the bearing and the load-carrying capacity of the bearing, to a great extent.

The definition of viscosity is based on Newton's law for fluid flow, which states that at any point in a fluid the shearing stress is directly proportional to the rate of shear. A good example of viscosity is shown by the fact that molasses, pouring more slowly, has greater viscosity than oil. Viscosity is a physical property of an oil just as are density, color, pour point, and fire and flash points. It is the chief property of an oil to be considered in the formation of oil films. It is viscosity that determines the viscous drag which is responsible for the pumping of the oil between the surfaces. Generally, the slower the motion, the higher must be the viscosity in order to create a complete film.

All authorities point out that it is necessary to supply a sufficient quantity of oil to compensate for that which is lost through end leakage. If a complete film is to be established and maintained, oil must be supplied at a point where the film pressure is low. It is also well proved that the greater the load, the higher must be the viscosity of the oil to resist the squeezing-out effect.

Crude petroleum itself is the most versatile of nature's resources, with more than 400 primary products being made from it. For lubricating oils the breakdowns are so many that a classification is most difficult to present. Generally they are classified into five groups—extra light, light, medium, heavy and extra heavy.

Good bearing oils should be medium bodied, medium grade oils of the so-called paraffin and red engine oil types. Dynamo or electric motor oils should be light-bodied and high-quality, with a viscosity range from 125 to 200 U. S. at

Prompt Service

ENGINEERS — MANUFACTURERS
GENERAL MILL EQUIPMENT CO.
KANSAS CITY, MISSOURI

YOU can depend on us for special service when you're in a jam. We will do our utmost to help in case of breakdowns—day or night—Sundays or Holidays. Try us and let us prove the merits of our prompt service.

MANUFACTURERS OF:

ECONOMIST AGITATOR
CONCENTRATE MIXER
HORIZONTAL BATCH MIXER
OVERHEAD TRUCK HOIST
PLATFORM TRAILER LIFT
ROTOMASTER SIFTER and EXPERIMENTAL SIFTER
CARLOADING CANOPY
ROLL TRAM
ROLL DOLLY
BLOWERS

SUPPLIERS OF:

SILK AND WIRE BOLTING CLOTH
ELEVATOR BUCKETS, BELTS
ROLLER CHAIN DRIVES
V-BELT DRIVES
BELTING (Leather, Cotton, Rubber)
BEARINGS
SHAFTING
MOTORS
PULLEYS
CAR DOOR OPENERS
MANY OTHER ITEMS

For Prices, Rush Orders, Information *Telephone* KANSAS CITY, MISSOURI GRAND 2454

GENERAL MILL EQUIPMENT CO.
2021 PENNSYLVANIA AVE. • KANSAS CITY 10, MO.

The Southwestern Laboratories
KANSAS CITY, MO.
GRAIN - FLOUR - FEED

100° F., but such oils are seldom suitable for splash or circulating systems.

Medium quality, light and medium bodied oils, ranging in viscosity from 130 to 500 U. S. at 100° F., are best for external bearings of steam engines. Good gear oils will vary from low to high quality and from light to heavy body, depending on the type of gear, method of lubrication, and operating conditions.

Most machinery oils are of medium quality and vary from light to medium body. They are frequently similar to engine, bearing and similar type oils.

There was a time in average plant practice when every machine in the plant could be lubricated out of the same can of grease, but increasing specialized development has created a need for a widely different type of grease and consideration must be given more closely toward seeing that every machine receives the type and kind of grease best adapted for its operation. The safest plan to follow is to always use exactly the grease specified by the manufacturer who has made hundreds of tests seeking just the right kind and type to be used. Order the greases desired to fill the specifications laid down by the manufacturer of each piece of equipment in the plant.

Many firms use greases where oils should be used. This is not a good practice, for all greases tend to separate under high temperature and high speed conditions. In those two latter conditions the substitution is seldom advisable.

However, when lubrication must be supplied under dirty atmospheric conditions, greases are generally better than oils. Greases are also for use on bearings of inaccessible machinery, where freedom from dipping is important, and in similar circumstances.

Greases should be purchased according to specifications determined in practice or based on authoritative formulas. Here are two examples, federal specifications for mineral and graphite lubricating grease, which any miller can follow with safety.

"*General Requirements.*—Mineral lubricating grease shall be a smooth, homogeneous mixture of mineral oil and pure odorless lime soap made from animal or vegetable fats or oils or fatty acids, completely saponified with hydrated lime, and shall be suitable for the lubrication of such parts of motor equipment and other machinery as are lubricated by means of compression cups, and for use in ball and roller bearings.

"Mineral lubricating grease shall contain no fillers such as rosin, rosin oils, talc, wax, powdered mica, sulfur, clay, asbestos, or other undesirable or deleterious impurities.

"Mineral lubricating grease shall possess only a slight odor of mineral oils and may be rejected if it has any other distinct odor.

GRAPHITE SPECIFICATION

"Graphite lubricating grease shall be a smooth, homogeneous mixture of mineral oil, graphite, and pure, odorless lime soap made from animal or vegetable fats or oils, completely saponified with hydrated lime.

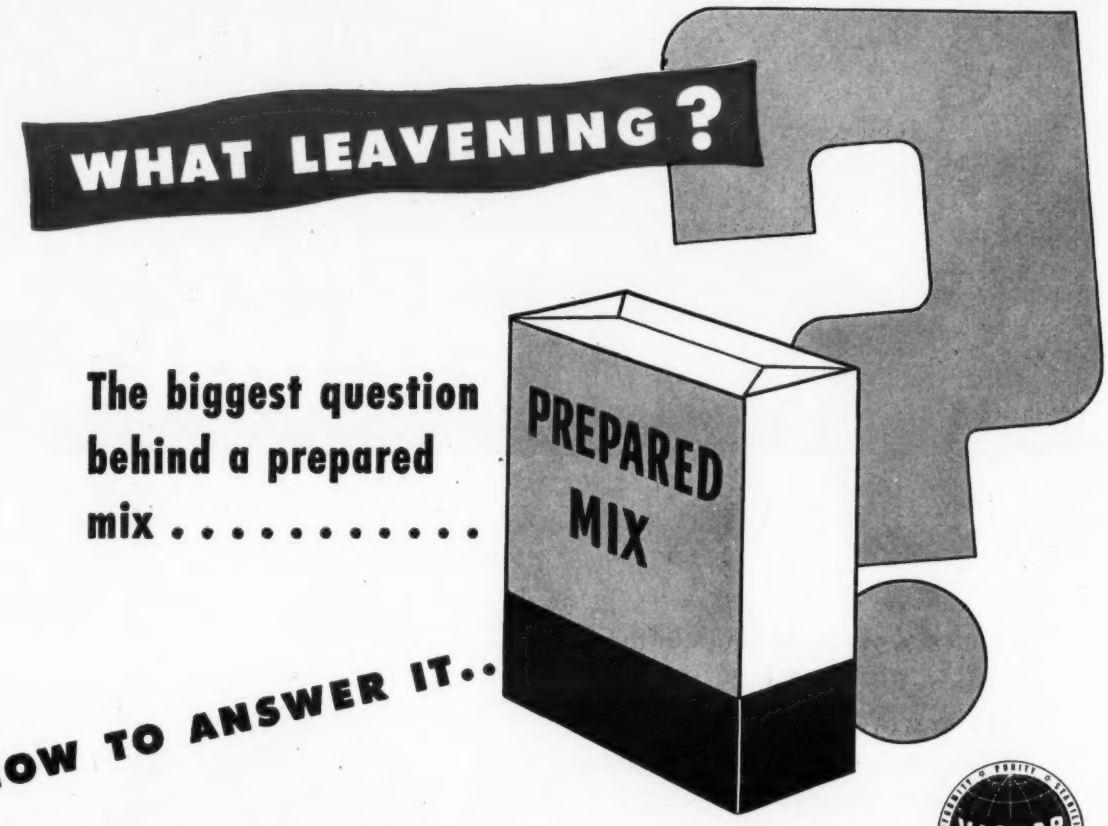
"Flake graphite shall be used that is free from grit and that contains at least 82% of graphitic carbon."

These two specifications are well worth keeping in mind in choosing one's grease requirements.

Lubrication a few years ago could be a hit and miss proposition, but even then there existed too high maintenance costs simply because of this neglect.

These maintenance costs can be reduced by lubricating with care and intelligence and seeing to it that each lubricating point in the plant gets just the one type of lubricant it requires.

GRAIN damage, which may be brought about in a short time by mold growth, may appear at the same moisture values but at a much lower rate when mold growth is absent. Among the types of damage not due to mold growth but to the influence of high moisture on the seed metabolic processes is that known as "sick" wheat. This condition which may arise in damp wheat in bulk storage, is characterized by a loss of viability and a darkening of the germ portion of the grain.—Dr. Max Milner.



Of all the ingredients that go into the making of a prepared mix, none presents a more complex problem than the leavening.

Upon the leavening largely depends the shelf life of the mix as well as the volume, lightness, grain, and color of the oven product.

The problem is further complicated by the fact that a leavening found most efficient for a particular gingerbread may not prove at all satisfactory for a waffle, muffin, cookie, or other type of mix. *The leavening must be tailor-made for the specific mix in question.*

Importance of Rate of Reaction

Every leavening acid has its own characteristic rate of reaction with soda. Rate of reaction is, therefore, a primary factor to consider. Excessive loss of leavening gas while mixing the batter or dough must be avoided. The leavening should provide sustained action throughout the oven period without "tailing off" before the end of the bake.

How Much Leavening?

Then there is also the question of *quantity* of leavening. Sufficient leavening should be included in the mix to provide maximum expansion in the oven with a margin of safety to assure adequate shelf-life. Too much leavening must be avoided or the cake may blow-up in the oven.

Today, better than 95% of all chemical leavening includes a phosphate or phosphates combined in varying proportions. The question is which phosphate or phosphates . . . and how much?

For over forty years Victor Chemical Works has specialized in the production of food phosphates. From Victor's Research Laboratories have come many of the outstanding developments in the science of chemical leavening.

Get the Answer From Victor

If you would like help in answering the all-important leavening question, our laboratory will gladly submit suggestions for the most efficient leavening.

VICTOR CHEMICAL WORKS CHICAGO ILLINOIS

VICTOR PHOSPHATES

For Leavening

Monocalcium Phosphate
"Regent"—(hydrated)
"V-90"—(anhydrous)
Sodium Acid Pyrophosphate
"Victor Cream"
"Perfection"

For Mineralization

Monocalcium Phosphate
Dicalcium Phosphate
Tricalcium Phosphate
Calcium Pyrophosphate
Sodium Iron Pyrophosphate

• • •

Experimental samples on request

V-90 THE SLOW-ACTING PHOSPHATE THAT SPEEDS FLOUR SALES

VICTOR CHEMICAL WORKS, 141 W. JACKSON BLVD., CHICAGO 4, ILL.

NEW YORK • KANSAS CITY • ST. LOUIS • GREENSBORO, N. C. • *Plants:* NASHVILLE • MT. PLEASANT, TENN. • CHICAGO HEIGHTS, ILL. • VICTOR, FLA.

QUALITY BAGS!
REPROCESSED VACUUM CLEANED
COTTON & BURLAP
• OF ALL SIZES
• OF ALL DESCRIPTIONS
• ASSORTED TO WEIGHT AND GRADE BY EXPERIENCED SORTERS
A B C AMERICAN BAG CO.
1315 Knox Ave. N.
Minneapolis 11, Minnesota

Your Choice of Bearings

By W. F. Schaphorst

BEARINGS on important drives need not necessarily be ball bearings or anti-friction type bearings, but where there is more or less flexibility, the bearings certainly should be self-aligning. If there is need of a flexible coupling — as there often is—by all means, use one of first class design. A combination of that kind, properly installed, will maintain a high efficiency under all normal deflections and loads. Even under abnormal conditions, it will do surprisingly well.

It is absurd to use ball or roller bearings on every bearing installation, simply because such bearings run more easily than the conventional type. For greatest economy, shafts that are used only occasionally should be run in plain bearings.

If the power is turned on frequently, even though not continuously, and if electric motors are used for driving, ball or roller bearings may be better than plain bearings because the starting friction of plain bearings is high. On the other hand the starting friction of roller and ball bearings is not much greater than is the running friction. Hence smaller motors may frequently be used with ball and roller bearings. That, of course, is an important advantage in favor of the anti-friction type of bearing.

Where plain bearings can be kept in good condition at all times, the cost of the frictional load as compared with ball or roller bearings is often a very small item and may as well be neglected. For example, the frictional cost of running the main bearings of an engine, generator, motor, turbine, pump, and similar large units is ordinarily very small as compared with the total power involved, whereas the difference in cost between ball bearings and plain bearings is high. Under such circumstances, therefore, plain bearings may be more economical even though slightly less efficient. The interest on the difference in cost may be greater than the difference in value of the respective losses.

On line shafting where lubrication may be comparatively more difficult, where as a result the difference in friction may be considerable and hence the cost of power considerably less with ball or roller bearings—under such circumstances it is generally advisable to use the anti-friction type. An important advantage possessed by roller and ball bearings is that they require less lubricant than the plain type and they needn't be oiled so frequently.

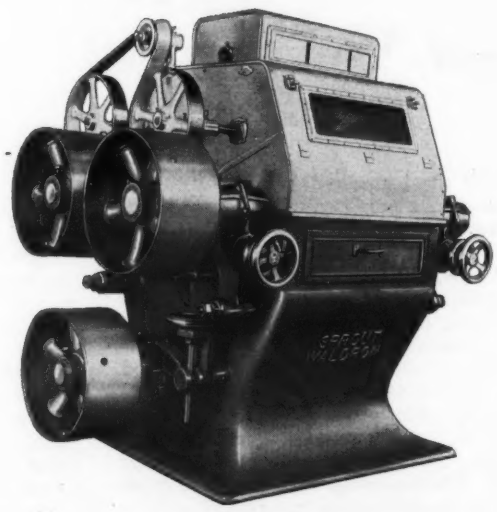
—BREAD IS THE STAFF OF LIFE—

OUTSTANDING EFFICIENCY
LOW OPERATING COST
LARGE-VOLUME PRODUCTION

WITH
SPROUT-WALDRON'S
IMPROVED "46"
ROLLER MILL

Like all the other machines in the **complete** SPROUT-WALDRON line, S-W's IMPROVED Roller Mill is expertly designed and engineered. Famous for its outstanding efficiency on large-volume production, this machine is exceptionally economical and easy to operate.

Call your Sprout-Waldron representative or write for complete details on the Sprout-Waldron line . . . the machinery you need for truly efficient production.



SPROUT-WALDRON & CO.

Manufacturing Engineers

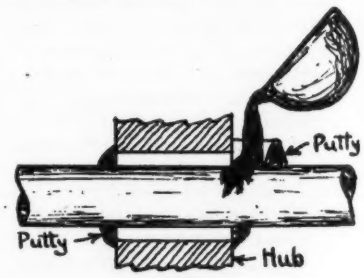
MUNCY **PENNSYLVANIA**

Making Emergency Bearing Repairs

WHEN standard bushings are unavailable and one is in urgent need of one or more such bushings, there usually is a way in which to make an emergency bushing that will serve the purpose. This is one of the advantages of mechanical drive.

Babbitt and lead often lend themselves to an occasion of this kind better than anything else.

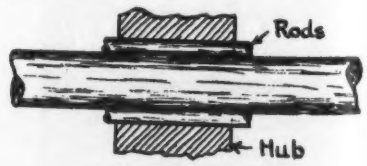
To insert and simultaneously make a babbitt or lead bushing, all that is necessary is to support the gear or pulley in any convenient way so that it is in its correct position around



(Figure 1)

the shaft. Then by means of putty or any other suitable material, build dams around the openings and arrange the mould so that the metal can be poured. The method is so obvious that detailed explanation is unnecessary. Then pour the metal about as indicated in Fig. 1. That's all there is to it.

For split pulleys, if it so happens that the bushing must be exactly one eighth of an inch thick, or a quarter inch, and if there are in stock some round iron rods an eighth or quarter inch in diameter, cut the rods to a length slightly greater than the length of the pulley hub. Then



(Figure 2)

use the rods for bushings placed side by side to fill the entire space between the shaft and pulley as shown in Fig. 2.

Square stock is better than round stock for this purpose because the

(Continued on page 23a)

automatic

Guardians

against Tramp Iron

DINGS DRUM-TYPE MAGNETIC SEPARATORS

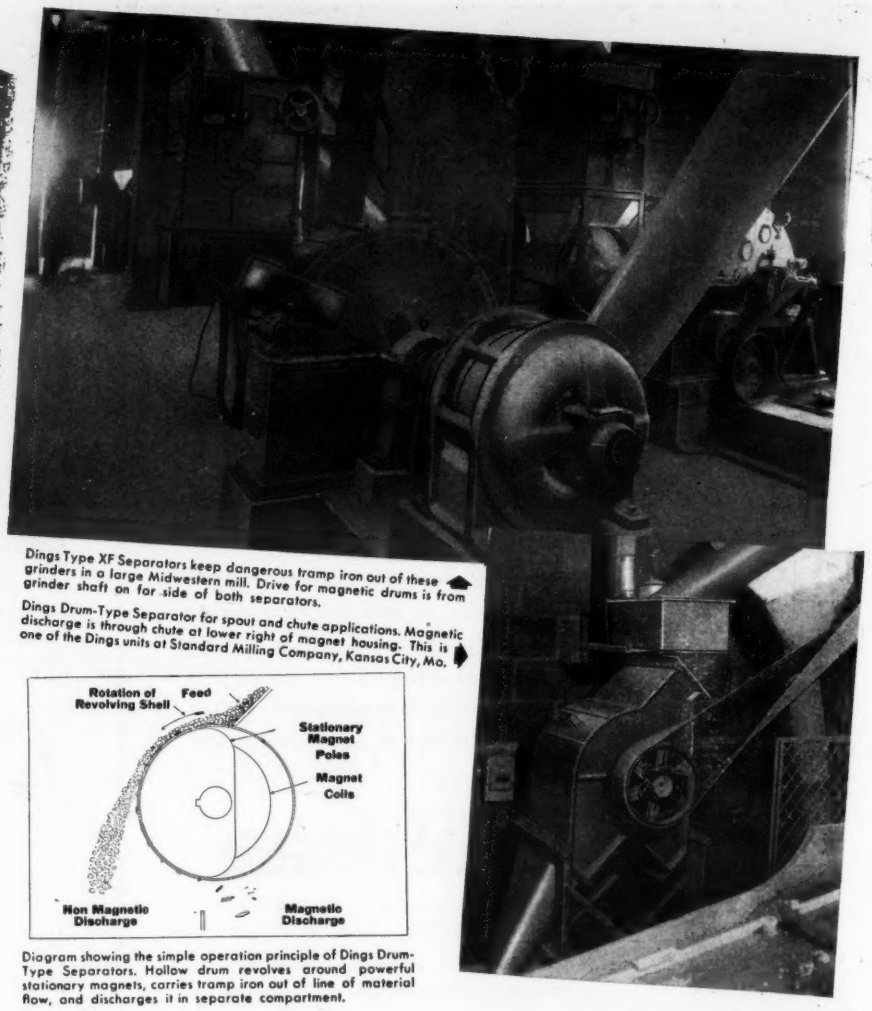
POWERFUL, automatic tramp iron removal with Dings Drum-Type Magnetic Separators insures your mill against the fire hazards, mill and grinder damage, and possible iron contamination that are ever-present without adequate magnetic protection. Dings "High Intensity" units have an effective range of *more than 20 times that of non-electric magnets*.... And automatic iron separation eliminates routine magnet cleanings that are easy and dangerous to forget.

Dings Drum-Type Separators are built in a wide range of sizes and types to fit the varying needs of individual mill setups. Dings Catalog No. 660 tells the complete story of magnetic drums. Write for it today.

DINGS MAGNETIC SEPARATOR CO.
527 EAST SMITH STREET MILWAUKEE 7, WISCONSIN

"Separation Headquarters Since 1899"

Dings
"HIGH INTENSITY"



Dings Type XF Separators keep dangerous tramp iron out of these grinders in a large Midwestern mill. Drive for magnetic drums is from grinder shaft on far side of both separators.

Dings Drum-Type Separator for spout and chute applications. Magnetic discharge is through chute at lower right of magnet housing. This is one of the Dings units at Standard Milling Company, Kansas City, Mo.

Diagram showing the simple operation principle of Dings Drum-Type Separators. Hollow drum revolves around powerful stationary magnets, carries tramp iron out of line of material flow, and discharges it in separate compartment.

Do you know your insect pests? Do you know what fumigant will best get at the source of your insect infestation? Do you know how best to apply that fumigant to get the most effective kill from it?

Fumigation is a specialists' job. It takes "know how," "know when," and "know what," to keep a mill clean and insect free. Our fumigation engineers "know."

Write or call

The Industrial Fumigant Co., Inc.
5955 West 65th St., Chicago

Portland, Ore.
704 N.E. 68th St.

Minneapolis
216 Hodgson Bldg.

For Smooth Blending

COLUMBIA
FLOUR BLEND
Sodium Bicarbonate

PITTSBURGH PLATE GLASS COMPANY
COLUMBIA CHEMICAL DIVISION
FIFTH AVENUE at BELLEFIELD • PITTSBURGH 13, PA.
Chicago . . . Boston . . . St. Louis . . . Pittsburgh . . . New York . . . Cincinnati
Cleveland . . . Minneapolis . . . Philadelphia . . . Charlotte . . . San Francisco

AGB

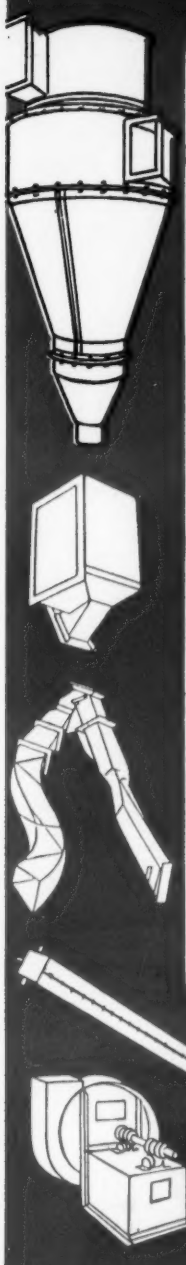
Silk Bolting Cloth and Silk Grit Gauze

AGB Silk Bolting Cloth is being used with unsurpassed results by many of America's largest flour millers.

MADE IN AMERICA

Albert Godde Bedin, Inc.
246 Madison Avenue, New York 16
MILLS: DEPEW, N. Y. ANDOVER, N. Y.

BRANCH OFFICES: CHICAGO—300 W. Adams Street • LOS ANGELES—813-19 Santee Street



It's the KNOW-HOW *that* COUNTS!

An *efficient* dust collecting system must be engineered to the building, equipment and conditions in which it operates.

The DAY organization has had 65 years of experience in planning, fabricating and installing dust control systems—especially in the grain and milling industry.

This specialized experience, plus complete MODERN equipment and the convenience of three strategically located plants, can be helpful to you in planning for greater efficiency, safety and profit in your plant. There's no obligation in writing us about your needs.

The DAY Company
PLANTS for SERVICE and SAVINGS to YOU

In MINNESOTA—Home Office and Plant
822 THIRD AVE. N. E., MINNEAPOLIS 13
In MISSOURI—1820 Harrison St., Kansas City 8
In CANADA—Ft. William, Ont., P. O. Box 70

DAY Dust Control
SINCE 1881

RURAL CORN MILL—This mill, hidden in a grove of trees near the settlement of Zanoni, Mo., was built in 1907 and has operated continuously, grinding corn meal for the community. The water wheel also supplies power to generate electricity for the post office and general store.

Our Sincere Wish for You and Yours

A Merry Christmas
Happy New Year

527 2nd Ave. S. E. **TWIN CITY MACHINE CO.** Minneapolis, Minn.

ANNOUNCING AVAILABILITY TO
THE MILLING AND ELEVATOR TRADE

THE HERSEY DUST COLLECTOR

A NEW HIGH CAPACITY HIGH EFFICIENCY
FULLY AUTOMATIC DUST FILTER
DESIGNED EXPRESSLY TO MEET
FLOUR MILL AND ELEVATOR REQUIREMENTS

SPRAKE & CO.
1517 SMITH TOWER
SEATTLE, WASH.
MANUFACTURERS AND DISTRIBUTORS

RODENT CONTROL CO.

220 Broadway, Dept. J.
NEW YORK 7, N. Y.

. . . RATS . . .

DO YOU KNOW THAT—

The rat propagates at such an explosive rate that the reproduction potential of one pair of rats in a 3-year period is some 350 million progeny?

DO YOU ALSO KNOW THAT—

You can be rid of rats and mice without the worry that the use of poison involves—without the inconvenience of setting and cleaning traps—and without the expense of exterminating service?

YOU CAN BE YOUR OWN EXTERMINATOR

We have prepared a bait (in cookie form) that contains Red Squill, a drug from the Mediterranean, which is harmless to humans and domestic animals, but has the special qualities that mean DEATH TO THESE RODENTS. The Red Squill, being a slow-acting drug, practically eliminates the possibility of rodents dying indoors. They are forced to go outdoors in their frantic search for water.

ALL YOU DO IS SCATTER OUR RODENT CONTROL COOKIES IN INFESTED AREAS

No. XB—1501—Packed 100 Baits to Box, Price $ 8.00
No. XB—1502—Packed 250 Baits to Box, Price $15.00
No. XB—1503—Packed 500 Baits to Box, Price $25.00
No. XB—1504—Packed 1,000 Baits to Box, Price $40.00

"IT IS WORTH THE PRICE BECAUSE IT DOES THE WORK WITHOUT DANGER TO HUMAN LIFE"

Your purchase order or check will assure you prompt delivery. We pay all shipping charges except on C.O.D. orders.

Some Representative Users:

Republic Steel Corp.
United States Rubber Co.
Universal Match Corp.
The Ruberoid Co.
The Am. Fork & Hoe Co.
Dartmouth Woolen Mills
National Gypsum Co.
General Foods Corp.
Detroit Harvester Co.
Globe Aircraft Corp.
B. F. Goodrich Co.
Link-Belt Co.
Van Raalte Co., Inc.
Amer. Woolen Co., Inc.
Standard Brands, Inc.
Interwoven Stocking Co.
Libbey-Owens Ford Glass Co.
Lehigh Navigation Coal Co.
Wagner Baking Corp.

Spare Parts in Glass Jars

EMPTY glass jars, such as those used to pack peanut butter, jams and jellies, make excellent receptacles for storing small parts, screws, tacks, washers and other items in workshops. The screw-top jar lids should be fastened to the under side of shelving above or near the work bench and when some item is wanted, it is not necessary to look through a number of tin cans or in other containers to find what you are looking for. You can readily see the article you want without any difficulty. It is only necessary to unscrew the jar from the lid, remove what is needed, and then screw the jar back on its lid. The size of the glass container can be proportioned to the size of the object and the number kept for future use. Larger jars can be stored on the shelves, instead of being mounted to the underside.

——BREAD IS THE STAFF OF LIFE——

Of added significance to the general question of wheat protein is the disclosure recently by a member of the Board of Grain Commissioners for Canada that investigations are being made in that country to grade wheats upon their protein contents, or at least, the protein content of a sample may be a factor in assigning a grade.

Bearing Repairs

(Continued from page 20a)

round pieces will act like rollers in a roller bearing if the pulley is not bolted up sufficiently tight to prevent such motion. For this reason rough round pieces are better than smooth. Use square or rectangular stock in preference to the round if the former is available.

Sometimes the quickest way is to use strips of hardwood laid side by side around the interior of the pulley just as explained above for the rods. Wood is more easily reduced to the proper size than metal. Where there is ample contact surface between the pulley and shaft wood generally serves the purpose just as well as metal.

Machine Design

(Continued from page 3a)

toxicant is greater than it would be for one which could be applied to milling wheat, since the limitations are fewer. Effect on baking characteristics, toxicity to humans or residual odor are examples of limitations which could be disregarded if screenings only were to be treated.

The foregoing discussion about wheat cleaning or treatment to remove insect life as well as insect fragments may seem to digress from the subject of his talk. But the point is that if insect contamination can be removed before it reaches the milling machines, less effort will need to be expended in revamping these machines.

Eliminate Square Corners

The number one rule to remember in redesigning flour mill machinery for better sanitation is this: Replace all angle corners with suitable rounded corners. Easy accessibility for cleaning and repair is important—accessible to sight and reach. There should be no places where organic material may accumulate and decay or harbor insects. Inside surfaces should be made as smooth and slick as possible. Cracks where insects might find hiding places must be avoided either by use of material other than wood, or by improved construction details. Efforts must be made to discover a suitable wood impregnating chemical distasteful to flour mill insects.

The conventional half-hexagon elevator leg boot, resting solidly on the floor, is without question the prime supply of infestation in a flour mill. These boots usually contain from one half to three or four inches of dead stock. Periodic cleaning and treatment with an insect toxicant is helpful. A much preferred boot is that having a round bottom. It should be raised above the floor sufficiently high to permit sweeping beneath it. If the boots cannot be raised, then it is sometimes not too difficult to lower the floor beneath the boots. Round bottom boots have been designed which provide constant elevator cup clearance. They should be cast from noncorrosive metal and possess a very smooth surface.

Flour reels are high on the list of machines which contribute to infestation problems. Being of wood construction, they provide numerous cracks where insects may live. Rather than attempt to refashion reels so they will no longer be good insect homes, milling engineers prefer to replace them with sifters. Hundreds of reels are being replaced annually.

The conventional purifier of wooden construction with sloping sides, conveyors, tip valves, feed gate area and sieve frame provide numerous insect lodging places. The elimination of at least a part of these objectionable features is, however, not

To MACARONI and NOODLE MANUFACTURERS

To supply the best answer to manufacturers of macaroni and noodle products who will enrich their lines in accordance with the new Federal Standards of Identity, Hoffmann-La Roche has arranged for the marketing of:

'ROCHE' SQUARE ENRICHMENT WAFERS for batch mixing

1 wafer, to 100 lbs. of semolina, disintegrated in a small amount of water and thoroughly mixed in your dough, gives a macaroni or noodle product fully meeting the minimum FDA requirements (per lb.—4 mg. vitamin B_1, 1.7 mg. vitamin B_2, 27 mg. niacin, 13 mg. iron). Only Roche makes SQUARE enrichment wafers designed for easier, accurate measuring and to mix in solution within seconds.

ENRICHMENT PREMIX CONTAINING 'ROCHE' VITAMINS for mechanical feeding with any continuous press

1 ounce of this powdered concentrate added to 100 lbs. of semolina enriches to the same levels as above. We have helpful information on mechanical feeding equipment.

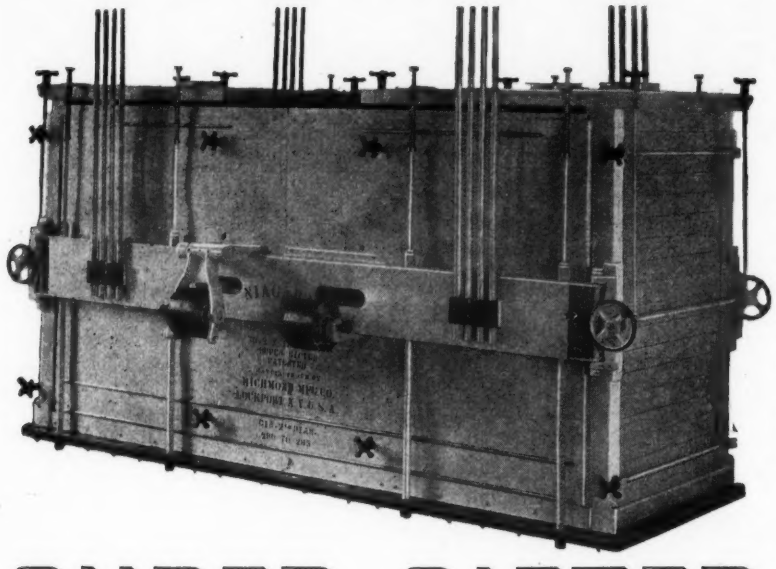
A postcard will bring you the names of companies for whom we manufacture wafers and whose enrichment premixes are made with 'Roche' bulk vitamins exclusively.

Consult the company with the widest technical experience in the improvement of food products by enrichment.

ROCHE *Vitamin Division*

HOFFMANN-LA ROCHE, INC., NUTLEY 10, NEW JERSEY

SANITARY



SUPER SIFTER

The last word in modern high-speed design. Feature perfect circle; simplified flexible flow; totally enclosed drive; no bucking; no vibration and NO sifter box or false bottom for the accumulation of infestation.

A new folder is ready for you. Learn about the 2 and 4 section models—with 10 to 22 sieves in each section. All stocks from first break to rebolt handled with perfect separations at lightning speed.

RICHMOND MFG. COMPANY
LOCKPORT, N. Y.
MANUFACTURERS OF—
HI-SPEED SIFTERS, MAGNETIC SEPARATORS, ETC.

too great a task. Some mills have already replaced sloping sides and conveyors with metal hoppers. New purifiers may be purchased with this modification. At least one manufacturer offers purifiers made of aluminum. Their design eliminates conveyors. Old wood purifiers may be greatly sanitized by application of a good grade of white enamel on inside.

Roller mill stands are not usually looked upon as serious offenders in the campaign against infestation. Nevertheless, wooden housings, curved tins under feeder rolls, metal clad cantboards back of the feeder rolls and poorly constructed hoppers under the rolls are all possible resting places for insects. Metal roll housings are rapidly replacing the old style wooden ones. Several millers report that they have succeeded in eliminating the curved tins under feeder rolls. It is presumed that in making the alterations they eliminate the metal covered cantboard.

Insects may frequently be observed between the roll and end-blocks and the roll housing. Finely ground inert dust or insect toxicant of the DDT type applied to such places should be permissible and beneficial.

Redesign of Sifters

Selection of new sifters or improvements in old ones should be made with emphasis on sanitation. A sifter without floor pedestal is preferred for ease of sweeping beneath it. Inside the conventional sifter box are several features which contribute to the infestation problem. Plush is one. Unused channels and outlets in the stacked-sieve type sifter box are undesirable. There are unavoidable joints in sieve construction which often result in cracks or openings large enough for insect harborage. Generous application of good grade of white enamel paint will fill these cracks. Metal covering of certain internal places to prevent wear provides a possible hiding place. Inert dust or DDT could safely be applied before the metal is tacked in place.

One of the surest places to find live insects following a general fumigation is in a Nordyke sifter bottom. As originally constructed this sifter bottom is held in place with many screws and its removal for cleaning is a laborious task. As a result the pockets therein never get a thorough cleaning. It is not a difficult task to make this bottom frame quickly and easily removable. In a Nordyke sifter that has been in use for several years stock will have packed so tightly in some of the pockets that blowing or vacuum will not dislodge it. Only by removing the bottom frame can it be thoroughly cleaned.

Canton flannel sifter stockings make good insect habitats. Efforts are being made to develop an infestation proof stocking. Multiflex rubber has been suggested.

Milling and designing engineers are at work to eliminate the undesirable features in most sifters. At least one manufacturer claims to have overcome some of the objections by elimination of the sifter box and use of a flat panel outlet bottom. It is claimed that when the sieves are removed, the outlet bottom is readily accessible for thorough brushing. This manufacturer replaces the usual plush packing with a special cork impregnated, sponge-rubber packing.

The Wolf type of sifter in which the sieves shove into place in slides resembling drawers has several desirable features from a sanitary viewpoint. If plush packing could be eliminated and pans made of metal which would not corrode and to which farinaceous material would not adhere, the Wolf sifter would be greatly improved.

Stocking Dust Collectors

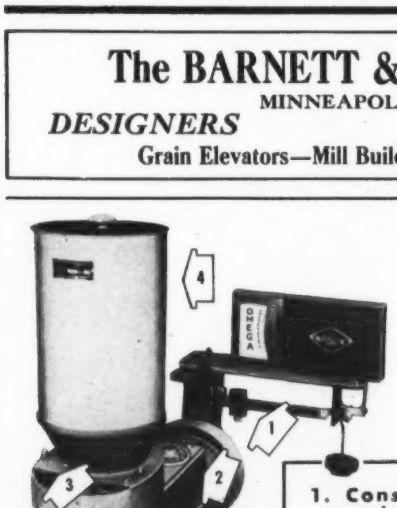
Tubular stocking dust collectors are a favorite playground for moths. Presumably any filter-type dust collector would constitute a similar sanitary hazard. Moth-proofing of textiles is now rather common practice. Perhaps the material from which dust collector tubes are made could be moth-proofed. In many instances, tubular type cloth collectors could be replaced with metal cyclone collectors.

But even metal dust collectors are not without their disadvantages. Even properly constructed inlets may provide places for accumulation of static stock. Settling chambers built to receive the exhaust air from cyclone collectors are a two-way nuisance. They constitute an explosion hazard and are an ideal place for insects to live and multiply. Patented filter type dust collectors with automatic self-cleaning attachment can be, and sometimes are, most prolific fountains of insect life unless carefully maintained.

Screw conveyors are a necessary evil from the standpoint of insect control. In designing a new mill, many conveyors can be eliminated. High ceilings or additional floors to

The BARNETT & RECORD CO.
MINNEAPOLIS, MINN.
DESIGNERS *BUILDERS*
Grain Elevators—Mill Buildings—Industrial Plants

THE CROWN BAG CO.
2549 Broad St. Memphis, Tenn.
Telephone 4-3017
Dealers In Used Bags & New ... Cotton and Burlap
Bags For All Purposes



1. Constant check: weigh scale shows amount fed.
2. Instant control: precise hand wheel adjustment.
3. Simple mechanism: even distribution; continuous feeding.
4. Removable hopper: simply lift off to empty contents.

OK FOR ABSOLUTE UNIFORMITY IN FLOUR ENRICHMENT
OMEGA VITAMISER

The Omega Vitamiser eliminates guesswork — feeds just the right amount of vitamin concentrate, without wasting or skimping. Machined groove in feeding disc provides exact volumetric measurement of concentrate; the variable speed drive controls feeding rate by merely setting a dial. Write for Bulletin 61-64

OMEGA MACHINE CO.
(Division of Builders Iron Foundry)
89 CODDING ST., PROVIDENCE 1, R. I.

permit longer spouts is one innovation. Use of additional elevator legs is another. Even in old mills many conveyors can be eliminated if enough thought and ingenuity are applied. The screw itself is not at fault. The conveyor box is the bad feature. Wooden conveyor boxes with triangular strips in the inside bottom corners are the worst. Round-bottom, metal box conveyors, precision built so that they are reasonably self-cleaning are fairly acceptable where conveyors must be used. Metal from which they are made should possess a very slick surface. Bearings at junction of two sections of conveyor screw permit accumulations of stock for potential infestation.

Drop Bottoms in Conveyors

More and more conveyor boxes built with drop bottoms for easy cleaning are being installed. Frequent cleaning with powerful vacuum system and gulper attachment, although laborious, is quite effective in keeping conveyors insect free. Conveyors resting on the floor or on top of a line of purifiers are common. Here drop bottoms are impossible. These same conveyors may have several spouts running into the top of them. So the tops cannot be removed. Cleaning such a conveyor is a real problem. Some mills have one slanting side to the conveyor box and a sloping hinged lid as on a reel or purifier conveyor. Such a box has its objectionable points but at least it provides accessibility for cleaning the conveyor. Transformations on bottom of conveyor box for the purpose of supporting a cut-off slide and spout create a pocket when the slide is closed. If the slide is infrequently used the accumulated farinaceous material may become infested and so nullify the effort put into the construction of an otherwise well designed conveyor. This is a very common fault of flour distributing conveyors over a series of flour storage bins.

The use of metal lining in wooden spouts should definitely be discouraged. If you have such spouts in your mill, try taking one apart after a general fumigation. Many cases have been reported where such an inspection disclosed live insects under the lining. On the other hand, some metal-lined spouts have been reported to be entirely free from live insects. It has been suggested that in the one case the spout may have been so tightly constructed that fumigating gas could not penetrate between lining and wood, whereas in the other case there were some open cracks. This explanation seems reasonable. It suggests that perhaps small holes might be drilled through the wood to permit free entrance of fumigating gas into the space between metal and wood. Finely ground inert dust or DDT applied to the wood surface before tacking on the metal liner is recommended.

Deadfall boxes, sometimes called cushion-boxes, are ideal insect harbors. They can usually be eliminated without adverse effect on flow of mill stock. Setback spouts are equally as bad. So are spouts with cushion or dead-end pockets.

Selecting Rebolt Equipment

Rebolt sifters or reels are installed primarily to remove any abnormally large particles which may find their way into the finished flour as a result of a hole in some sifter cloth or other fault. Rebolting equipment, if clothed with sufficiently fine mesh silk, also removes most, if not all, insect life that may be present at this stage of manufacture. It is extremely important that rebolt equipment be kept free from dormant flour accumulations and that there be no holes in the silks. Reels are not recommended for rebolting purposes. In selecting a sifter for rebolting, particular attention should be given to those features which preclude places for insects to hide. The material which tails over from the rebolter should be treated at once to destroy all insect life. If an impact machine is used it should have ample capacity to take care of any abnormally great load caused by a break in sifter cloth somewhere in the mill or surge due to choke-up or other cause.

Flour packer bins appear innocent, but nevertheless are more often infested than is usually suspected. They can be cleaned without too much trouble by lowering a man into the bin. Because the inside surface of flour bins is usually rather slick, millers are prone to assume that there is no insect hazard and so neglect them. Careful examination will nearly always disclose the presence of ledges or cracks. The man who does the cleaning should be instructed to exercise his originality in the elimination of cracks and ledges as he comes upon them.

Impact machines are sometimes installed to treat finished flour. The miller who proposes to install such a machine is often confronted with a serious dilemma in choosing a location. The ideal location would be directly above the flour packer bin. There would then be no intervening conveyors or elevator legs where infestation might develop. In mills where production is small enough to be packed off with one packing machine this arrangement is good.

If, however, more than one flour packer is necessary to pack off the

CHEMICALS FOR THOSE WHO SERVE MAN'S WELL-BEING

3 TYPES of BI-CAP one quality

TYPE A

Guaranteed Minimum Analysis

Each Ounce Contains:	Milligrams
Thiamine Chloride (Vitamin B_1)	380
Riboflavin (Vitamin B_2)	230
Niacin (Nicotinic Acid)	2740
Iron*	2400

Starch—To make one ounce.
*Added in the form of sodium iron pyrophosphate.

For straight and patent flours: use one-half (0.5) ounce avoirdupois of BI-CAP Type A per 100 pounds. Patent flour containing less than 0.34% ash should be analyzed to determine whether slightly greater additions are necessary.

TYPE B

Guaranteed Minimum Analysis

Each Ounce Contains:	Milligrams
Thiamine Chloride (Vitamin B_1)	380
Riboflavin (Vitamin B_2)	230
Niacin (Nicotinic Acid)	2740
Iron*	2400

Starch—To make one ounce.
*Added in the form of reduced iron (ferrum reductum).

For straight and patent flours: use one-half (0.5) ounce avoirdupois of BI-CAP Type B per 100 pounds. Patent flour containing less than 0.34% ash should be analyzed to determine whether slightly greater additions are necessary.

TYPE C

Guaranteed Minimum Analysis

Each Ounce Contains:	Milligrams
Thiamine Chloride (Vitamin B_1)	760
Riboflavin (Vitamin B_2)	460
Niacin (Nicotinic Acid)	5480
Iron*	4800

Starch—To make one ounce.
*Added in the form of reduced iron (ferrum reductum)

For straight and patent flours: use one-quarter (0.25) ounce avoirdupois of BI-CAP Type C per 100 pounds. Patent flour containing less than 0.34% ash should be analyzed to determine whether slightly greater additions are necessary.

To help millers in matching BI-CAP more exactly to their *individual* flour enrichment needs, three types of this original enrichment concentrate are now obtainable. To make product identification easier, the container label on each type is imprinted in a different color – Red for Type A . . . Brown for Type B . . . Green for Type C.

Whatever type of BI-CAP serves your flour best, you can be sure that quality control is exercised with the strictness characteristic of Chas. Pfizer & Co. throughout its near-century as manufacturing chemists.

PFIZER QUALITY

CHAS. PFIZER & CO., INC.

MANUFACTURING CHEMISTS • ESTABLISHED 1849

81 Maiden Lane, New York 7, N. Y. • 444 West Grand Avenue, Chicago 10, Ill.
605 Third St., San Francisco 7, Cal.

Remedial
WATERPROOFING
Stopped 10 Acres of Aches!

If "cavities" in concrete or "pits" in brick walls ruin millions of investment, let us "fill" them by *RESTO-CRETE Grouting Method*—restore them for ages. 30 years of remedial waterproofing show acres of results. Get your job done promptly—contact us.

WESTERN WATERPROOFING CO.
Syndicate Trust Building, St. Louis 1, Mo.
ATLANTA, GA. • CHARLOTTE, N. C. • KANSAS CITY, MO. • SPRINGFIELD, ILL.

SERVICE THE "WILLIAMS WAY"

THE NOR-VELL QUALITY LINE

Complete

BELTING SERVICE

Get the RIGHT BELT *for Each Job from the* NORVELL-WILLIAMS *Line:*

LEATHER BELTING
CHAIN BELT DRIVES
COTTON & RUBBER BELTS

We are equipped to serve your full requirements for power transmission and conveyors—belt dressings, lacing, and other accessories—pulleys and shafts.

W. E. NORVELL, *President*
H. J. HOLDEN, *Vice Pres.*

NORVELL-WILLIAMS, INC.
Office: 1320 Main St. Factory: 4215 Michigan
KANSAS CITY, MO.

mill's output the stream will theoretically be proportionately distributed to the packers used. But there will be times when a disproportionately large share, or even the entire stream, will be valved to one packer. Obviously this will so overload the impact machine that it cannot kill all insect life. Or, it might even choke the impacter down. A by-pass spout is usually provided for such emergencies. Then, too, there is a possibility that the packer bin may fill up and flour back up into the impacter and choke it down. All these periods of failure to perform 100% effectively may allow insect life to find its way into the packer bin. Once the bin becomes infested the value of the impact machine is partially nullified.

But supposing the miller decides to install the impact machine farther forward in the system where the entire flour stream is flowing at a reasonably constant rate. Many of the objections just recited are eliminated. There are, nevertheless, rarer occasions when the machine will choke down, or be unduly overloaded. It is conceivable that some insects might get through the impacter while the mill is shut down. With impacter installations in this location, a spout, an elevator boot and leg and a conveyor over the packer bins are customarily required to transport flour from impact machines to packer. If this system once becomes infested and is neglected, the value of the impact machine is considerably reduced. The purpose of pointing out these faults is not to discredit the value of impact machines, but rather to emphasize that the mere installation of such a machine will not necessarily insure insect-free flour at the packer.

Feeders used for dispensing malted flour are favored by the confused flour beetle. Unless periodically emptied and cleaned they may become heavily populated.

More attention should be given by manufacturers of bran and shorts dusters to self-emptying of self-cleaning mechanism. It should not be difficult to devise a method to mechanically sweep all the throughs from the machine.

Buckleys, scroll mills, middlings grinders, flake busters and other similar machines are seldom serious offenders in so far as infestation is concerned.

Metal spouts and boots have an advantage over wood in that they provide fewer places for the confused flour beetle and moth to live and multiply. Metal, however, has a serious fault that cannot be ignored. Spouts and boots made from metal sometimes sweat on the inside. This, of course, is most noticeable in cold weather.

The flat grain beetle is not often found in finished flour, but is probably responsible for a part of the insect fragments found. This insect thrives on decaying farinaceous matter and can often be found in the crusted, decayed layer on the inside of a spout where sweating has previously taken place. There is need for a spouting material to replace both metal and wood.

Bags BURLAP and COTTON PAPER PLAIN OR PRINTED
TRUCK COVERS TWINES

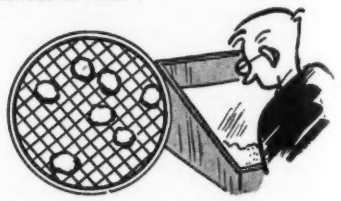
MAX KATZ BAG CO.
INDIANAPOLIS, IND.

HOW TO SEPARATE A CAT FROM A MOUSE

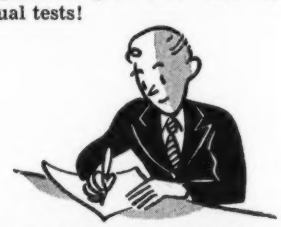
● Simply a matter of screening . . . a useful trick for a mouse to know. In fact, screening is a useful trick in any trade. . . . even the salt business!

You see, in the salt business we've got to fit the salt to the job. Butter-makers don't want large, slow-dissolving crystals in Butter Salt. We remove the "big ones" so completely, you won't find even a trace on a 28-mesh Tylor screen. But they don't want fine dust, either, to cause pasting in the churn. Diamond Crystal Butter Salt contains only 3% of particles small enough to pass through a 65-mesh screen!

Yes, it's as vital to the butter-maker that we remove over-sized and under-sized salt crystals . . . as it is to the mouse to screen out that cat. (Well, *almost* as vital!)



Happily for the mouse, he got results. And so do we at Diamond Crystal. That's why you can always be sure of clean screening whenever you specify Diamond Crystal. Take your choice of grade or grain size — it's tops by actual tests!



Want Free Information on Salt? Write Us!

If *you* have a salt problem, let our Technical Director help! Just drop him a line in care of Diamond Crystal Salt, Dept. A-11, St. Clair, Michigan.

DIAMOND CRYSTAL
ALBERGER PROCESS **SALT**

ROLL GRINDING
and CORRUGATING
Also **NEW ROLLS** *for Sale*
TWIN CITY MACHINE CO.
Minneapolis, Minn.

The **BEARDSTOWN MILLS**
FLOURS *Complete Range*
Spring Wheat • Kansas Wheat • Soft Wheat
Full Line of **CRITIC FEEDS**
SCHULTZ, BAUJAN & CO., Beardstown, Ill.

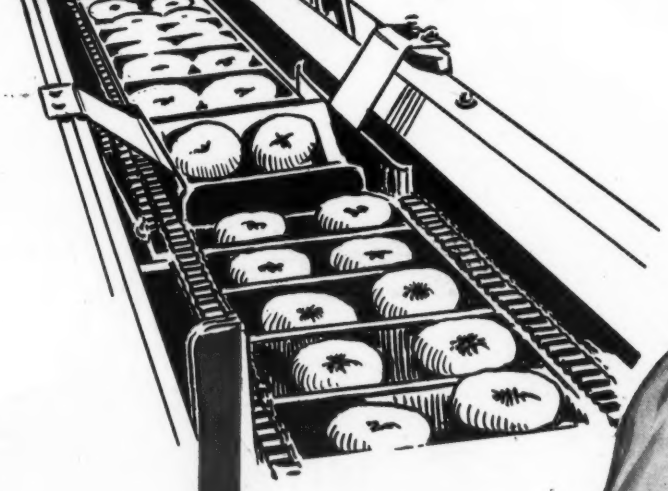
for protection plus*

DCA SHIPS ITS PRODUCTS IN MULTIWALLS

*Protection plus economy and consumer preference—that's why Doughnut Corporation of America ships its products in Multiwalls. This progressive company was the first in its field to adopt a St. Regis Packaging System (packers and multiwall paper valve bags). The results achieved have more than justified this decision, for DCA and its customers have found that Multiwalls help keep mill and bakery storerooms clean — and protect the packaged product against contamination by insects and rodents.

That's *real protection* for both miller and baker, and in addition there is *real economy* provided by a St. Regis Packaging System — a system that enabled DCA to increase packaging production and reduce packaging costs.

With results like these, it's no wonder that other leading producers of flour and flour mixes are turning to Multiwalls — the modern container that gives both miller and baker Protection Plus.



MULTIWALL

MULTIPLY PROTECTION • MULTIPLY SALEABILITY

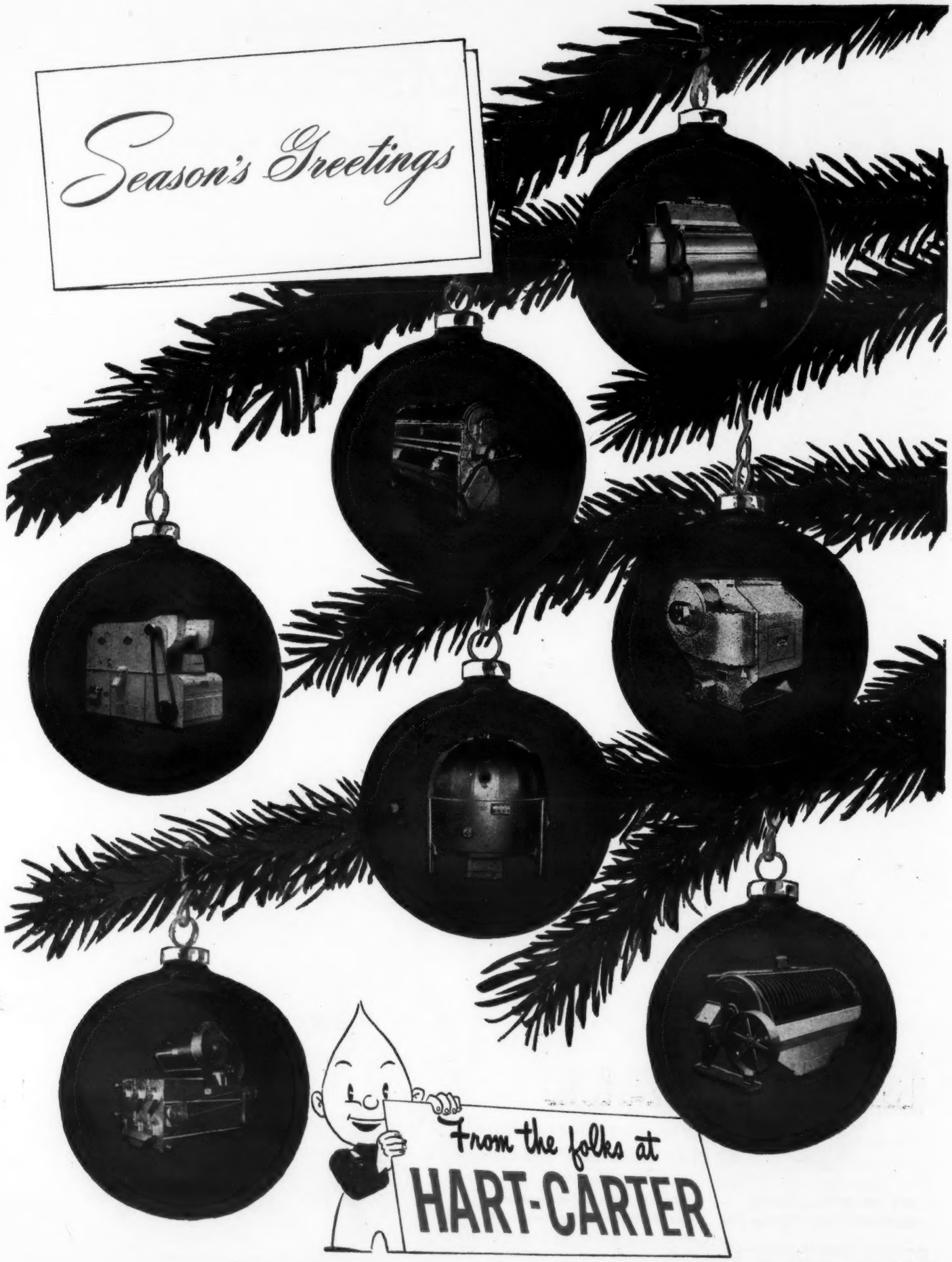
ST. REGIS SALES CORPORATION

(Sales Subsidiary of St. Regis Paper Company)

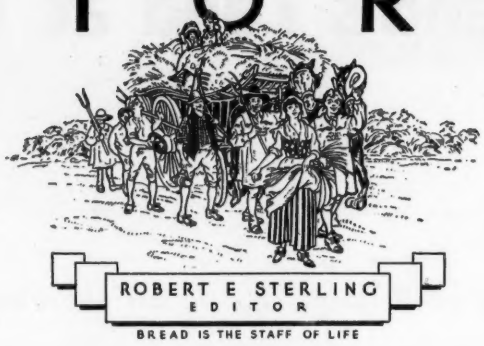
NEW YORK 17: 230 Park Ave. CHICAGO 1: 230 No. Michigan Ave.
BALTIMORE 2: 2601 O'Sullivan Bldg. SAN FRANCISCO 4: 1 Montgomery St.

CANADA
St. Regis Paper Co. (Can.) Ltd.
Vancouver, British Columbia
Montreal, Quebec

Allentown Birmingham Boston Cleveland Dallas Denver Detroit Franklin, Va.
Los Angeles Nazareth, Pa. No. Kansas City, Mo. New Orleans Ocala, Fla. Seattle Toledo


Season's Greetings
From the folks at
HART-CARTER

EDITORIAL



NEW HOPE IN LEWIS DEFEAT

THESE days as the Christmas festival approaches are hard days and filled with discouragement. Wherever we turn something, many things, are wrong; and wherever we observe or read new fears arise and our hearts are further saddened. At this moment we feel that the situation created by the ruthless action of a little group of men exercising power over hundreds of thousands of other men bound in helpless serfdom to their leaders was perhaps the greatest blow that ever befell this nation and its people in time of peace.

For days on end we were compelled to witness the sorry spectacle of our high courts openly defied and taunted as the result of many years appeasement of the rulers of labor. Some of these threatened that, unless the government yielded to them, the result would be either national socialism or dictatorship. It is true that those who shouted these threats of the end of American free enterprise were sadly short of knowledge of American history, which is a continued story of a people willing to endure much but fully capable when driven to an extreme of thrusting out the disturbers and being each time the stronger for the experience.

Certainly our state today is incomparably better than the time three quarters of a century ago when civil strife was decided by arms and the reconstruction period subsequently continued through nearly an added score of years. Nor are conditions comparable to those of World War I and the subsequent days of reconstruction, or to the period less than a quarter century ago, when idle men marched in the streets, the banks were closed and all industry was palsied. Fresher in memory are the days when on a dozen battle fronts on every continent and every sea of the world we were yielding with low hearts but yet high courage to the vicious attacks of powerful enemies.

It is rather easy to forget these tragedies of the past as we witness the present attacks upon the laws, the courts, all industry, all labor and all of the people by a few brutal leaders, drunk with power, who challenged the nation and dared it to say "no." Yet, thanks to a courageous judge whose name will live long in American history, this "no" was said with the vigor of outraged justice and the conviction of eternal right. Today, unless some other servant of the government proves unworthy of the people's trust and weakens, the victory of law and order already is as well assured as was the defeat of the vastly more powerful eagles of Germany when our forces landed on the coast of France.

Meanwhile, amid our present confusion and fear for the future, there shines the beacon of assurance that long petted and spoiled padrones of labor have so overreached themselves in violating both the letter and principles of the laws of the land that they now have completely assured defeat of many of the so-called "rights of labor"; that as soon as the Congress meets they will be whittled down to the size of other men so that the brutalities of the past several years in over-riding the rights of others will not have been endured in vain.

Further, it almost certainly will be realized by the millions of serfbound followers of these "champions of labor" that in the several years account of what they have won in wages and privileges gained through strikes will be much more than offset by the loss of earnings, the stoppages of production, the hardships of lack of jobs and, finally, the respect of the whole people. On account of these things the nation may still be of good heart, and the deceived followers of the John Lewises of the land may also find that their own future is in better hands in the whole people's sense of fairness than it is in the beetling brows and jutting jowl of this self-appointed Napoleon who, like every other tough ambitious to conquer the world, finally stood before the seat of judgment—the firm will of the whole people.

• • •

THE PRESIDENT TURNS STUBBORN

A FEW weeks ago, in commenting on the effect of the election on the probable future of govment, we wrote:

> **"There obviously remains the problem of reasonable harmony or destructive dissidence between the Congress and President Truman. It is a general characteristic of stupid men that when they are denied their will, or even whims, they become stubborn. However, Mr. Truman, a man of native good humor and good will who has oftentimes admitted his own incapacity, may not develop this characteristic, but rather may be disposed to exert every effort to effect accommodation with Congress. No one, so far as we know, ever has questioned his patriotism, hard as he has tried and dismally as he has failed to make it effective in the service of his country."**

We reprint the entire paragraph, not by way of placing any emphasis upon either its wisdom or lack of it, but chiefly to repeat the second sentence referring to the normal characteristic of stupid men, when denied their way, or even whim, to **become stubborn.** We now submit that this, in the case of President Truman, has proved to be a forecast right on the nose.

But in indulging in a mild boast for the accuracy of our foretelling, we are compelled, in simple justice, to admit that the President's turning stubborn has not been in the interest of his party, or in his relationship with the new Congress or in any aspect of politics, as we anticipated, but in the interest of the whole nation and all of its people. He simply came to the end of the line in his following the Roosevelt policy of coddling labor, and, with no regard whatever for his political future, took a stand in opposition to Lewis and the rest of the members of the labor oligarchy, a stand clearly entitling him to rank, in this particular, with such earlier Democratic presidents as Jackson, Cleveland and Wilson. Through this single **stubborn** act, wholly apart from the vast confusion in which he has involved the nation and its people through the long months past, President Truman has won the thanks of the millions of unorganized Americans who have been so ruthlessly kicked about by labor bandits with government backing and support as finally to convince them that they dared defy the government itself.

What the ultimate result may be no man can say, for the government still is saturated with weaklings who shudder at the mere suggestion of antagonizing "The House of Labor," and even the higher courts are yet to be heard from. Yet President Truman's stand not only will do much to force the weaklings of his own administration into line but give courage to the new Congress, with reasonable prospect that the gross inequities of the now notorious Wagner Act and other laws supplementing it will be wiped out.

It is perhaps worth recalling that when President Truman was acquiring his political education under Pendergast tutelage at Kansas City he may have learned something from his boss about handling obstreperous labor leaders. In those days when some labor disturbance arose and a strike threatened, Boss Pendergast simply said "no" and that was the end of the show. It is one of our own lingering memories of those days when Pendergast ruled a city, county and half a great state, that some of the building trades boys got out of hand and amused themselves by riding hog wild through the downtown district night after night throwing pop bottles through the merchants' plate glass windows.

Ultimately an unprecedented citizens' rebellion arose and, by some chance, we found ourselves on a committee of five representatives of civic organizations bearding the lion, in the person of Judge McElroy, Pendergast's city manager servant, and demanding that the business stop. A merry row followed with a considerable calling of things by their right names ending in an apparent deadlock with no pledges either given or received. But from that day to this there has not been a show window smashed by a thrown bottle.

What happened, of course, was that the high command sent word to the boisterous boys at labor headquarters to "lay off" — just as simple as that.

• • •

TOLERANCE

WE are confident of the indulgence of the Associated Press in our reprinting the following three paragraphs summarizing what its distinguished world correspondent, Mr. Hal Boyle, reported, upon his return to America, as the three "fundamental things" he learned during four years of travel exceeding 100,000 miles covering five continents, 50 countries, witnessing many battles, numberless riots, a couple of revolutions, seeing endless food lines and conversing with the great, the near great and the small people of the earth. Mr. Boyle's summary of what he learned follows:

> ***"1. Men and women in all lands—from a Bronx taxicab driver to a lady hod-carrier in Bombay—ache for peace, freedom and security for their children in a world better than they themselves have known.***
>
> ***"2. They all, deep in their hearts, are willing to accept any pattern that will lead them nearer that eternal goal.***
>
> ***"3. Peace must produce new heroes of compromise and tolerance in many countries to defeat fresh ambitious villains again piping the old Hitler tunes of distrust, prejudice, pride and greed."***

We prophesy that, as soon as Mr. Boyle has renewed acquaintance with his homeland, he will find that precisely these same yearnings are deep in the hearts of the people of this most blessed of all peoples. He also will find in good time that the reason we in this country do not possess these inestimable possessions is because we are so sadly lacking in what he so aptly describes as "heroes of tolerance" leaders to battle courageously against the forces of prejudice, intolerance and class hatreds which for a decade and a half have sought—we are confident without avail—to make this a nation divided within its own borders.

• • •

A WAGGISH SAMARITAN with heart filled with sympathy one day last week wrote a placard soliciting contributions to help pay a recent $10,000 fine, placed it in an ash tray, baited it with a nickel and set it on a bridge table in the locker room of his country club. All that was garnered from both players and surrounding kibitzers was a single regretful penny, whereupon the kindly inventor of a great idea hastily grabbed for his nickel bait lest it too be lost.

ARNOLD
...of...
STERLING
Mills and Sells
"Thoro-Bread"
(Diastatically Balanced)
A very fine, strong, altogether uniform and dependable flour
ARNOLD MILLING CO.
STERLING, KANSAS

The Rodney Milling Co.
20,000 CWTS CAPACITY
KANSAS CITY, MISSOURI
"Heart of America" FLOUR
CHICAGO OFFICE:
Kelly Flour Co., 919 N. Michigan Ave.
BOSTON OFFICE:
Seaboard Allied Milling Corporation
1209 Statler Bldg.

We are always ready to fill your requirements of
MILLING WHEAT
MOORE-SEAVER GRAIN CO.
Operating Kansas City Southern Elevator Kansas City, Mo.

WOLCOTT & LINCOLN, Inc.
GRAIN MERCHANTS
Operating:
Chicago Great Western Elevator
Kansas City
Wolcott & Lincoln Elevator
Wellington, Kansas
Main Office: KANSAS CITY, MO.
Board of Trade Building

CHARLES H. KENSER
Member Omaha Grain Exchange
MILLING WHEAT
MILLFEED • CLEARS
440 Omaha Grain Exchange
OMAHA, NEBRASKA

Western King Flour
Uniform Bakery Flour
MANEY MILLING CO.
Omaha, Neb.

KING MIDAS FLOUR
KING MIDAS FLOUR MILLS
Minneapolis, U. S. A.

Lyon & Greenleaf Co., Inc.
MILLERS OF
High Grade Soft Winter Wheat Flour
Plain and Selfrising
LIGONIER, IND. NORFOLK, VA.

England's Land at War

The Story of Britain's Battle on the Food Front

WHEN war came to Great Britain in 1939, the people of this island country, remembering well the hungry lessons learned in the first World War, turned with anxious eyes to the farmer. Primarily a maritime nation, Britain was a great importer of food —meat from the Empire and Argentina, wheat from Canada and America, dairy produce, fresh vegetables, bacon and eggs from the Continent. Imports fed the people.

But war had brought the blockade. German submarines were threatening the supply lines. Britain, with her imports of foodstuffs uncertain, was threatened with the prospect of the peril of starvation.

The story of Britain's battle for food is told graphically in the illustrated pamphlet titled "Land at War," prepared by the Ministry of Information. It is the story of how 300,000 farms, strong points in the battle against hunger, were armed, equipped and manned so that the rich though neglected soil of the islands could be won back to fertility and help to feed and sustain a nation at war.

The war year of 1939 found the land of Britain no more prepared for war than the people. A large number of farms which had fought the battle for food in World War I had been allowed to slip back from cultivation to ranching and the process of neglect and deterioration had begun.

Before the war only about 1,000,000 families of the 48,000,000 people packed into the islands were engaged directly in the production of food. Most of the rest of the population were concentrated in the cities. Britain depended on overseas sources for more than 60% of her foodstuffs.

But not a moment was lost at the outbreak of war in preparing for the battle of the land. The Agricultural Departments had their war plans ready and brought them into action immediately.

Practical farm men in every county were organized into committees to direct the work of their particular area. A Women's Land Army Committee was appointed for each county to supervise the land girls. District committees were formed and the organization was set up to channel the government orders down the chain of command to the individual farmer.

Here is the way it worked, as explained in the official pamphlet:

"The government might say to the Minister of Agriculture: 'We need so much home-grown food next year.' The Minister assured himself that the labor, tractors, equipment, and so on would be forthcoming, and said to the chairman of the County Committee: 'We've got to plow 2,000,000 extra acres next year. The quota for your county is 40,000.'

"The chairman said to his District Committee chairman: 'You've been scheduled for 5,000 acres.'

"The committeeman said to his parish representative: 'You've got to find 800 acres.'

"And the parish representative, who knew every yard of the valley, went to the farmer at the end of the land. 'Bob,' he said, 'how about that 17-acre field—for wheat?'

"And Farmer Bob said, 'Aye.'"

Staff of Experts

The government organized a staff of experts to help the committees, to explain modern methods of farming and popularize them. There were the Cultivations Officer, the Tech-

(Continued on page 30)

MECHANIZED HARVESTING—Increased mechanization was a necessity in Britain's battle for food. After the first five years of the war Britain possessed one of the most highly mechanized agricultures in the world. The rapid pace of this development was due largely to the efforts of Britain's home industries and the generosity of her friends and allies.

As fine a flour as you will find milled from the finest Turkey wheat in the heart of Kansas in
An Independent Mill
WOLF MILLING CO.
ELLINWOOD, KANSAS

Evans Milling Co.
INDIANAPOLIS, IND., U. S. A.
Manufacture Kiln-Dried
WHITE CORN PRODUCTS
Capacity, 16,000 Bushels

"Whitewater Flour"
Ground Where the Best Wheat Is Grown
WHITEWATER FLOUR MILLS CO.
Whitewater, Kansas

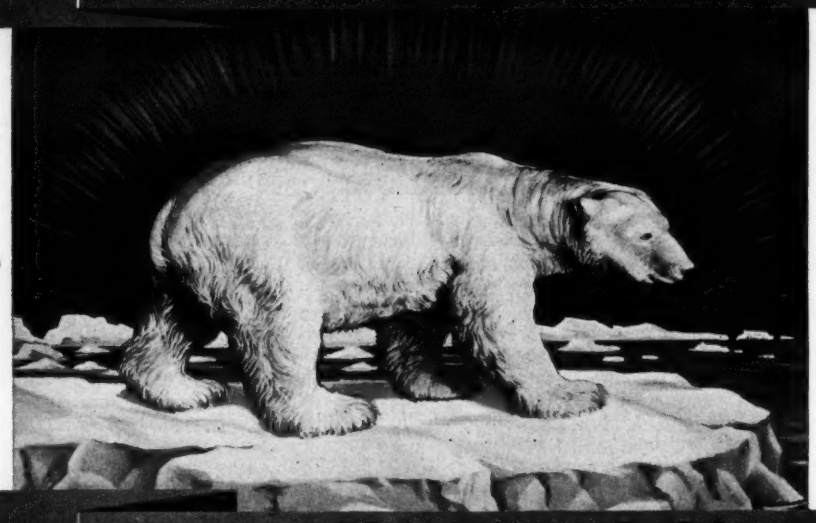
THE ROSS MILLING CO.
Choice Quality Flour
Plain and Selfrising
OTTAWA KANSAS

LUCKY GLUTEN FLOUR
Prompt Delivery
Uniform High Quality
FEDERAL MILL, Inc.
Lockport, N. Y.

MILLING ENGINEERS, INC.
Designers and Builders for the Grain Processing Industries
1016 Baltimore • Kansas City, Mo.

THE WALNUT CREEK MILLING CO.
Millers of Fine, Country-Milled Kansas Wheat Flours
Since 1877
GREAT BEND, KANSAS

POLAR BEAR FLOUR IS KING



Real flour quality means extra dollars in sales to bakers these days—more than ever before. For extra fine crumb quality in bread, you can depend on the better baking properties of POLAR BEAR, milled just right from carefully chosen wheats. You'll like it.

FOUNDED BY
ANDREW J. HUNT–1899

The NEW ERA MILLING CO. at KANSAS CITY, KANSAS

Hart-Bartlett-Sturtevant Grain Co.

BOARD OF TRADE BUILDING KANSAS CITY, MISSOURI

Grain Merchants

Operating Terminals at—
Kansas City (River Rail)
St. Joseph, Missouri
Sioux City, Iowa

Sub-Terminal at
Nebraska City, Nebraska

Country Elevators in
Six States

EXPORT FLOUR INSURED *ALL RISKS* BY

The SEA INSURANCE CO., Ltd.

OF LIVERPOOL

ORIGINATORS OF ALL RISKS INSURANCE ON FLOUR

Policies of this Company are held by leading millers

CHUBB & SON

United States Managers

90 John Street New York

Atlanta, Georgia Insurance Exchange, Chicago, Ill. Montreal, Canada

WISCONSIN RYE FLOUR

Made from Wisconsin Grown Rye

We are exclusive rye millers and the largest producers of rye flour in the state.

WHITE HEATHER....BLUE RIBBON....RYE MEAL

GLOBE MILLING CO.
WATERTOWN, WISCONSIN

"Wisconsin·Makes·the·Best·Rye·Flour"

ARCHER-DANIELS-MIDLAND COMPANY

J. M. CHILTON, Mgr. Grain Dept.

GRAIN MERCHANTS

Milling Wheat and Coarse Grains

MINNEAPOLIS

MILWAUKEE, WIS.
BUFFALO, N. Y.
KANSAS CITY, MO.
SAN FRANCISCO, CAL.
OMAHA, NEB.
PORTLAND, ORE.
DULUTH, MINN.

"ROCK RIVER" RYE "OLD TIMES" BUCKWHEAT

"BLODGETT'S" RYE

All Grades—From Darkest Dark to the Whitest White
—Specially Milled by the Blodgett Family—Since 1848

FRANK H. BLODGETT, Inc., Janesville, Wisconsin

MINNESOTA GIRL

SPRING WHEAT FANCY PATENT FAMILY

FLOUR

CAPITAL FLOUR MILLS

DIVISION OF
INTERNATIONAL MILLING COMPANY
GENERAL OFFICES: MINNEAPOLIS • MILLS: ST. PAUL

Stuffed Straights

FROM THE MANAGING EDITOR'S SIFTER

By Carroll K. Michener

NEW NAME, ANCIENT RENOWN.—Under a new name an ancient institution steps forward with young ideas into what it hopes will be a new era of accomplishment matching the 65 years during which it marched under the old name.

The Chamber of Commerce of Minneapolis was organized in October, 1881. The name was appropriate then. But in the ensuing years more and more organizations throughout the country dealing with general civic and public affairs have appropriated the term "chamber of commerce," and commodity exchanges either have relinquished it or eschewed it in favor of nomenclatures more closely descriptive of their functions and services. Hence now, following a nearly unanimous vote of the members, we have a Minneapolis Grain Exchange.

An added reason for the change was the confusion that became progressively greater as the years went on because there was another local organization calling itself the Minneapolis Civic & Commerce Association. Now that group assumes the cast-off name as one it has coveted long since as more appropriate to itself, and less misdirected mail will have to be shuttled back and forth between the offices of the two organizations.

● **Origins.**—Minneapolis was a city of 50,000 inhabitants when the grain exchange was organized. Now it is 10 times as big and is the market center of a metropolitan area inhabited by nearly a million. The city early became the principal wheat market of the Northwest. When "a small group of public spirited citizens" determined that an exchange was needed Minneapolis was already a flour milling center of great and rapidly growing proportions.

There had been a short-lived predecessor. A board of trade was organized before the Civil War, at which time lumbering was the chief local industry. But with the building of railroads immediately following the war and the development of the grain trade that came as a result of the establishment of the flour milling industry the board of trade proved inadequate and died young, unmourned. For a few years, states one of the city's historians, "the complex business interests of the two cities (Minneapolis and St. Anthony Falls) were almost in a state of chaos." Into the breach came Col. George D. Rogers. Maybe we ought not to present the early history of the chamber in his words, for some of those words seem to reflect a jaundiced attitude toward the flour millers of his day. But history is or ought to be dispassionate, and maybe the industry of today can take it without change in blood pressure, so here goes:

"When I came to Minneapolis in 1873 from Calmar, Iowa, where I had been buying and shipping grain, the grain trade was in the grip of the Minneapolis Millers Association. The need of an organized chamber of commerce was pressing, yet it was almost impossible to convince the grain men themselves that such an organization would be successful. Time and again they answered my urgent pleas for a grain exchange by declarations that only cities located at lake or seaports with water transportation were entitled to an exchange. Many times I answered them by saying: 'Show me another water power site such as St. Anthony Falls, capable of supplying current for the operation of countless flour mills and I will show you the location for a grain exchange.'

"Shortly after coming to Minneapolis I sent out circulars to all former patrons announcing that I would handle their grain on commission. A few days later came a letter from a farmer at Luverne informing me that he had shipped three cars of No. 1 wheat, such as was desired by the millers. When the cars arrived I took a sample from each, went to the agent of the millers' association and asked for a price.

" 'Where did the grain come from?' he asked.

" 'I thought it was quality of grain rather than point of shipment you were seeking' was my reply. He then explained that if the grain was shipped to me from a station where the millers' association had an agent the mills would not buy it. They had an agent at Luverne and he refused to buy it.

"Nothing was left for me to do but to ship it to Chicago. The wheat was loaded into cars which the railway refused to allow to leave their lines. Hence I requested that three larger cars be parked alongside the grain cars, hired half a dozen men to transfer it and went to bed. Next morning when I drove to the siding I found the millers' agent on deck. He asked what I was doing with the wheat and then offered to take it off my hands at the price I had quoted the preceding day. I refused the offer.

" 'Pay me two cents a bushel more to cover my expenses and take the wheat,' I told him.

" 'Ridiculous!' he answered, and I ordered the men into the cars. Before the first shovelful of wheat had left the car he paid the price, and explained that the association was acting to prevent 'dangerous competition.' That's the kind of market we had in those early days.

"The millers had another agent who superintended the buying of grain brought by teams. When the independent grain men took advantage of their offer to pay 10 cents a bushel more for old wheat than new, the millers boosted the price because they were forced to overcome competition. One morning the Pioneer Press, then the leading paper read in Minneapolis, announced that the Millers' Association had decided on prices until further notice—ten cents less for No. 2 and 3 than for No. 1 wheat. New wheat at Chicago prices, less the freight, commission, inspection and weighing, brought the same figure as old. I knew it was a gamble and realized the margin for buying and shipping. I sent men out on all roads leading to Minneapolis to meet grain haulers with their teams and direct them to my station at Fourth and Washington. I paid for the grain in cash and had loaded several cars for shipment when the millers found out what was going on. The next morning the Pioneer Press announced that the millers' association had 'decided to pay the same price for new wheat as for old.' Similar incidents bobbed up daily, all pointing toward the need of a centralized grain market and organized exchange.

"During the summer of 1881, after months of incessant effort to interest merchants, millers, grain men and bankers, in the formation of an exchange, eight men finally met to discuss organization. After much preliminary struggling, articles of incorporation were finally drawn up with the following names appended: H. G. Harrison, A. C. Rand, John Dunham, A. H. Bode, E. V. White, R. P. Russell, J. T. Buxton, W. F. Meader, C. M. Loring, A. D. Mulford, Samuel P. Snyder, A. B. Taylor, D. C. Bell, Anthony Kelly, James A. Lovejoy, Frank L. Morse, D. Syme, S. W. Serl, Robert McMullen, J. R. Coykendall and R. L. Crockett."

● **Officers, 1881-1947.**—The presidents, secretaries and treasurers of the Chamber of Commerce from its organization in October, 1881, to 1947, were as follows:

Presidents—H. G. Harrison, 1881-82; E. V. White, 1882-83; George A. Pillsbury, 1883-85; Charles M. Loring, 1885-89; F. L. Greenleaf, 1889-92; C. A. Pillsbury, 1892-94; J. H. Martin, 1894-96; L. R. Brooks, 1896-98; C. M. Harrington, 1898-1900; John Washburn, 1900-02; James Marshall, 1902-04; E. S. Woodworth, 1904-5; P. B. Smith, 1905-07; J. D. McMillan, 1907-08; H. F. Douglas, 1908-09; G. F. Ewe, 1909-10; G. F. Piper, 1910-11; J. R. Marfield, 1911-12; F. B. Wells, 1912-13; F. M. Crosby, 1913-14; A. C. Loring, 1914-15; F. A. Hallet, 1915-16; W. O. Timerman, 1916-17; C. M. Case, 1918-19; William Dalrymple, 1919-20; B. F. Benson, 1920-21; J. H. MacMillan, 1921-22; F. C. Van Dusen, 1922-23; T. W. Hall, 1923-1924; A. L. Searle, 1924-25; H. J. Moreton, 1925-26; Shreve M. Archer, 1926-27; John S. Pillsbury, 1927-28; W. J. Russell, 1928-29; George P. Case, 1929-30; C. T. Stevenson, 1930-31; H. G. Dickey, 1931-32; P. B. Getchell, 1932-33; A. F. Owen, 1933-34; F. J. Seidl, 1934-35; J. C. Wyman, 1935-36; E. E. Mitchell, 1936-37; F. C. Smith, 1937-38; W. H. Mills, 1938-39; J. A. Mull, 1939-40; E. S. Ferguson, 1940-41; E. J. Grimes, 1941-42; Adrian M. Howard, 1942-43; E. H. Mirick, 1943-44; M. R. Devaney, 1944-45; H. H. Tearse, 1945-47.

Secretaries—G. D. Rogers, 1881-82; C. C. Sturtevant, 1882-93; G. D. Rogers, 1893-1906; L. T. Jamme, 1906-07; John G. McHugh, 1907-37; E. S. Hughes, 1937-40; E. C. Hillweg, 1940-47.

Treasurers—T. J. Buxton, 1881-83; George B. Shepherd, 1883-84; William Powell, 1884-89; H. H. Thayer, 1889-96; C. T. Jaffray, 1896-1924; J. S. Pomeroy, 1924-26; John G. McHugh, 1926-37; E. S. Hughes, 1937-40; E. C. Hillweg, 1940-47.

A scanning of the presidential roster discloses the names of many flour millers and others closely associated with flour milling. It must be assumed, therefore, that whatever reluctance there may have been on the part of some of the early millers they and their successors showed no subsequent reluctance or lack of cooperation in the promotion and administration of the exchange.

These millers' names are discernible in the list of presidents, and to them are appended their milling connections of the time in which they served:

George A. Pillsbury, Charles A. Pillsbury & Co.
Charles M. Loring, proprietor of the Holly Mill, the Galaxy Mill and the Minnetonka Mills.
F. L. Greenleaf, Greenleaf Milling Co.
Charles A. Pillsbury, Charles A. Pillsbury & Co.
John Washburn, Washburn-Crosby Co.
Franklin M. Crosby, Washburn-Crosby Co.
Albert L. Loring, who took over the properties of his father, Charles M. Loring, in 1880, and later became head of the Pillsbury company.
Shreve M. Archer, Commander-Larabee Co.
John S. Pillsbury, Pillsbury Flour Mills Co.
W. J. Russell, Duluth-Universal Milling Co.
Walter H. Mills, General Mills, Inc.
E. H. Mirick, Pillsbury Flour Mills Co.
M. R. Devaney, Russell-Miller Milling Co.

● **Summing Up.**—A neat little peroration for this account comes across this desk from E. C. Hillweg, who is now the secretary of the exchange. He says:

"In summarizing the conception and growth of this market, I like to emphasize that it did not happen by accident, nor was it alone the work of any particular group of men. Natural advantages were turned to productive uses by men of vision and courage, but it was a combination

The Three-Building Plant of the Minneapolis Grain Exchange—Oldest Portion, in Center, Built in 1902.

MILLS STRATEGICALLY LOCATED IN THE CENTRAL WEST AND ON THE PACIFIC COAST . . .

Igleheart's
SPONGE TYPE . . .
CAKE TYPE . . .
PIE TYPE . . .
PASTRY TYPE
COOKIE TYPE
Swans Down
DOUGHNUT MIX
GOLDEN RISE ALL-PURPOSE MIX—

IGLEHEART BROTHERS
INCORPORATED
EVANSVILLE, INDIANA

Cable Address "RAYBAR"

TIDEWATER GRAIN COMPANY

Receivers - Shippers - Exporters
Export and Domestic Forwarders

Members all leading Exchanges
Established 1927

Bourse Building PHILADELPHIA 6, PA.
Chamber of Commerce BALTIMORE 2, MD.

North Dakota and Montana
FANCY SPRING PATENTS, CLEARS and WHOLE WHEAT FLOUR
Hi-Protein
A Specialty
Mills in the Heart of the Spring Wheat Section
Capacity, 700 Barrels
MINOT FLOUR MILL CO.
MINOT, N. D. GLASGOW, MONT.

"Dependable"
For nearly half a Century
Ceres Proven Flours
RED RIVER MILLING CO.
1500 Cwt. Daily • FERGUS FALLS, MINN.

WHITE WHEAT
Low Protein Cake and Cookie Flours
AMENDT MILLING CO.
Monroe, Mich.

HARDESTY MILLING CO.
Quality Millers for Over Half a Century
Domestic and Export DOVER, OHIO

"Sasnak Flour"
For Discriminating Eastern Buyers
ENNS MILLING CO., Inman, Kan.

Farmers & Merchants Milling Co.
Quality Flours
Mill at Glencoe, Minn.
Sales Office Minneapolis

of great resources which brought Minneapolis fame as a processing and marketing center. These resources were (1) the water power of St. Anthony Falls, which powered the pioneer flour mills; (2) the network of railroads pushed out from Minneapolis to cover the great agricultural region to the west, and (3) the high and varied productivity of that fertile land. The volume and variety of the grains grown in this region were attractive to buyers, and the members of the Chamber of Commerce provided a market place (a great store, you might say) where grains could be conveniently displayed for the benefit of both producers and buyers."

—BREAD IS THE STAFF OF LIFE—

4,198,859 Bbls of Flour Exported in Three Months

Toronto, Ont.—Customs exports of flour from Canada by countries of destination in October and the first three months of the current crop year, including October, were as follows:

	October bbls	3 Mos. ending October bbls
BRITISH EMPIRE		
U. K. or orders	409,963	2,187,860
AFRICA		
Br. South Africa	18,703	100,180
Gold Coast	7,171	10,276
Nigeria	862	2,488
Sierra Leone	3,672	5,767
Bermuda	342	8,120
Br. Guiana	15,000	53,617
Br. Honduras	.....	3,600
BR. WEST INDIES		
Barbados	9,829	32,474
Jamaica	63,764	175,787
Trinidad and Tobago	45,198	145,207
Other Br. W. Indies	24,629	75,605
Gibraltar	4,278	8,926
Hong Kong	.....	8,069
Newfoundland	25,891	123,111
FOREIGN COUNTRIES		
Austria	2,040	2,040
Belgium	.....	24,427
Belgian Congo	2,999	6,686
Brazil	68,370	131,245
China	169,452	440,724
Colombia	.....	1,825
Costa Rica	.....	2,602
Cuba	.....	8,469
Czechoslovakia	.....	9,170
Ecuador	408	11,808
Egypt	.....	111,584
FRANCE	.....	.....
Fr. Africa	1,142	1,142
Fr. Guiana	.....	6,880
Fr. West Indies	8,894	21,254
St. Pierre & Miquelon	875	1,425
Germany	.....	34,844
Greece	23,959	58,068
Greenland	.....	4,696
Guatemala	1,428	5,964
Haiti	3,680	10,925
Honduras	.....	1,624
Iceland	1,713	17,237
Italy	6,968	72,164
Liberia	153	1,522
NETHERLANDS	.....	.....
N. East Indies	.....	40,080
N. Guiana	2,124	7,701
N. West Indies	1,528	7,159
Nicaragua	816	2,039
Norway	31,244	58,103
Panama	.....	5,163
Peru	.....	892
Poland	.....	6,755
PORTUGAL	2,620	7,437
Azores and Madeira	.....	800
Portuguese Africa	.....	4,116
Salvador	.....	1,499
SPAIN	.....	3
Canary Islands	1,020	1,930
UNITED STATES	4	8
Am. Virgin Islands	300	1,008
Philippine Islands	1,530	59,562
Venezuela	23,157	64,742
	985,726	4,198,859

—BREAD IS THE STAFF OF LIFE—

DEC. 17 SET FOR FINAL HEARINGS IN RYE CASE

Washington, D. C.—Thomas Flavin, judicial officer of the Department of Agriculture has set Dec. 17 as the tentative date for final oral hearing on the alleged Chicago rye corner case, in response to written requests for such hearing by all six respondents.

Officials expect that the Dec. 17 session will mark the final session in the case, which has been underway since May, 1945.

ANNOUNCEMENT OF CONSOLIDATION OF EASTERN STATES FARMERS' EXCHANGE INCORPORATED AND ITS MILLING DIVISION IN BUFFALO

THE EASTERN STATES FARMERS' EXCHANGE, INCORPORATED, of West Springfield, Massachusetts, announces the consolidation of the corporate structure of the Eastern States Cooperative Milling Corporation of Buffalo, New York, with the parent organization. The consolidation was consummated on November 23, 1946. The Eastern States Farmers' Exchange, Incorporated, was the sole owner of the Milling Corporation, there being no other interests of any kind or nature, and the Milling Corporation has always been managed as a division of the parent company.

The Milling Division was originally created a separate corporation in 1925 under the New York State Cooperative Law for financial reasons. The Eastern States Farmers' Exchange, Incorporated, being a non-stock corporation procured the funds for the purchase and establishment of this Milling Division through the sale of preferred stock in the Milling Corporation to members of the Exchange, the parent organization investing its funds in the common stock which held management control and voting powers. The preferred stock was retired in 1932 after seven and one-half years.

The Eastern States Farmers' Exchange, Incorporated, owns other manufacturing properties in New England, Pennsylvania, Delaware, New York State and Ohio. In practice, management and finances have been treated for many years as though no separate subsidiary corporation existed, and in continuance of these practices there will be no change in personnel or management methods but the financial structure has been simplified. The office and personnel of the Milling Division of the Eastern States Farmers' Exchange, Incorporated, will continue to function in identically the same manner at Buffalo, New York, as in the past.

Anyone who feels justified in obtaining more detailed information concerning the consolidation is invited to communicate with Harry L. Lane, Treasurer, Eastern States Farmers' Exchange, Incorporated, West Springfield, Massachusetts. Financial references may be obtained through the usual credit channels or by communicating with the Guaranty Trust Company of New York, Manufacturers & Traders Trust Company of Buffalo, or F. S. Moseley & Company of Boston.

By QUENTIN REYNOLDS
Clerk and General Manager

EASTERN STATES FARMERS' EXCHANGE
Incorporated
95 ELM STREET, WEST SPRINGFIELD, MASSACHUSETTS

American Ace
—A very fine, short, strong patent milled in one of the West's very finest flour mills.
American Flours, Inc.
NEWTON, KANSAS

LARROWE'S
Kiln Dried
BUCKWHEAT FLOUR
• LIGHT
• MEDIUM
• DARK
The Standard Since 1870
LARROWE MILLS, INC.
COHOCTON, N. Y.

VANITY FAIR
TELEPHONE
MARITIME
INVADER
(HIGLUTEN)
"MASTER MILLED" Spring Wheat Flour
CANNON VALLEY MILLING COMPANY
Chamber of Commerce · Minneapolis

HIGH GLUTEN FLOURS
For Bakers
The Morrison Milling Co.
Denton, Texas
Emphatically Independent

Soft Cake Flour
For Biscuit Manufacturers
WATSON HIGGINS MILLING CO.
GRAND RAPIDS, MICH.

ACME — GOLD DRIFT
Better Bakery Flours
These Brands Meet Every Shop Need
The ACME FLOUR MILLS CO.
Oklahoma City, Okla.

"CREMO"
Just the Cream of Hard Wheat
CROOKSTON MILLING CO.
CROOKSTON, MINN.

"RUSSELL'S BEST"
"AMERICAN SPECIAL"
Our mill is located in the high protein wheat district of central western Kansas, and secures most of its wheat directly from growers.
RUSSELL MILLING CO., Russell, Kansas

England's Land

(Continued from page 26)

nical Officer, experts on silage, straw-pulping, ley-farming, farm drainage, milk production, machinery, fertilizers, pests and plant and animal diseases.

A National Farm Survey was begun. Hundreds of field workers began the task of surveying every holding with more than five acres of land. Thousands of square miles of country were covered in the survey with the condition of each farm recorded in detail.

The result was a collection of detailed maps which outlined 300,000 farms, providing invaluable data for the wartime mobilization of the nation's resources and helping to establish a blueprint for postwar agricultural planning.

Among the most important features of the wartime program of agriculture was the reclamation of land and the reseeding of poor quality pastures and rough grazings. A "plow-up offensive" was directed against millions of ripe but ragged acres.

Machinery depots were set up for the sharing of scarce equipment. Tractor drivers worked long days and on into the nights, and the land girls shared their hardships. Horses and men were forced to rest, but idle machinery was not permitted. Equipment was manned in shifts to utilize precious time, and even at mealtimes relief drivers would take over when available.

By the spring of 1940 the big job was done and the land lay ready for the first wartime sowing—2,000,000 new acres of it.

To farm this land, increased mechanization was necessary. By 1939 the mechanization of agriculture had reached a high stage of development in America, Canada, Australia and the Soviet Union. Mechanization came comparatively late to Britain, but the development was greatly accelerated by the war-precipitated emergency.

LAND ARMY GIRLS — Important contributions to Britain's wartime effort on the food front were made by the Land Army Girls. The farm front lost 98,000 skilled men during the wartime emergency, but taking their places were 117,000 women.

By 1944 the country had more than 175,000 tractors, compared with only 55,000 in 1939. After the first five years of the war Britain possessed one of the most highly mechanized agricultures in the world.

The rapid pace of this development was due largely to the efforts of Britain's home industries and the generosity of her friends and allies. The material help given by America and the Dominions was tremendous.

Power came to the British land, came to move mountains, drain marshes, to turn bogs into cornfields and cover hills with potatoes, to fight weather, disease, thorns, rocks and wilderness, to sow crops without hands and to harvest without loss. Most important of all, it was power that could often be operated by girls and could do the work of armies.

New Crops

New crops also came to the British land. Many farmers were required to accustom themselves to unfamiliar materials and struggle with new methods. Flower farmers, for example, were ripping up their rose trees to make room for wheat and barley. Fruit farms were set to growing potatoes.

The plow brought new crops to another specialized type of farm—the stock fattening grasslands of the South and Midlands. Such permanent grass and the beef it produced were expensive luxuries to a nation besieged; it could save more shipping by growing wheat and potatoes.

There were enemies beside the shortness of time and the scarcity of labor in the battle for food. They took forms both visible and invisible, from the rat and the woodpigeon to the blight-fly and disease-producing virus. In the wartime land battle, every resource of farmer and scientist had to be mobilized against them.

Farmers, Home Guards, soldiers, anyone who could fire a gun was organized to counteract the ravages of woodpigeons. The chemical gassing of rabbits proved an invaluable method of protecting crops.

The Pest Control staffs of the County Committees trained special operatives whose full time job it was to fight rats all the year round.

How to give a Bigger Bonus

...without budging your budget a bit!

SUPPOSE Bill S., one of your employees, is due for a $75 bonus this year. If you give the bonus in U. S. Savings Bonds, Bill will receive—not $75, nor a $75 Bond—but a *$100* Bond.

Yes, the bonus in Bonds looks like a lot more—and it *is* more. (Every $3 put into U. S. Savings Bonds pay $4 at maturity.) With the same size appropriation, you're actually giving a bigger bonus.

Consider, too, that Savings Bonds mean individual security for each Bond-holder—and collective security for all of us, because they help to control inflationary tendencies. You can easily see that you're doing yourself, your employees, and your country a favor by deciding to...

Give the BONUS in BONDS

...and keep up your Payroll Savings Plan!

IMPORTANT: If you have not already received your copy of "How You Can Help Give Free Enterprise a Boost," write on your letterhead to: Room 750, Washington Building, U. S. Savings Bonds Division, Washington 25, D. C. Limited supply. Please write today.

The Treasury Department acknowledges with appreciation the publication of this message by

THE NORTHWESTERN MILLER

This is an official U. S. Treasury advertisement prepared under the auspices of the Treasury Department and The Advertising Council.

Britain's Land at War

Land: Approximately 6,500,000 new acres were plowed up.

Labor: The land lost 98,000 skilled men; but 117,000 women replaced them.

Livestock: Between 1939 and 1944 milking cows increased by 300,000, other cattle by 400,000. But there were 6,300,000 less sheep, 2,500,000 less pigs, 19,200,000 less poultry.

Harvests:	1934-38 average tons	1943-44 tons	% increase
Wheat	1,651,000	3,449,000	109
Barley	765,000	1,641,000	115
Oats	1,940,000	3,059,000	58
Potatoes	4,873,000	9,822,000	102
Sugar beets	2,741,000	3,760,000	37
Vegetables	2,384,000	3,197,000	34
Fruit	455,000	705,000	55

Note: The above figures were taken from "Statistics Relating to the War Effort of the United Kingdom," a government White Paper published in November, 1944.

The land girl rat-catcher was one of the most interesting personalities the Land Army produced. Some, working entirely on their own, established remarkable personal records. A 19-year-old ex-dress designer from Leicester is reported to have gathered 327 carcasses from a Yorkshire granary in two days. The value of this operation can be weighed against the fact that 300 rats can eat three tons of wheat a year.

Priority for Milk

Milk was the food with number one priority in Britain. The cry for milk was insistent from the beginning of the war. And the British farmer answered the cry by selling more milk than ever before despite the lack of imported animal feedingstuffs and the restriction of grassland by plowing.

One of the main factors in the establishing of this record was a revolution in the use of grass, made possible largely through the widespread adoption of the "ley" system of farming.

Ley farming is a system of rotational cultivations aimed at restoring fertility to exhausted fields, and rejuvenating old pastures by sowing them with temporary grasses. At the same time, the system provides young healthy grass for the feeding of cattle.

In the wartime plan for agriculture in Britain wheat followed milk in importance. Next came oats, potatoes, sugar beets and barley. In England and Wales the acreage under wheat had increased in 1943 by over one third in comparison with the prewar acreage.

Most graphic proof of the results of Britain's effort to feed herself during the war is found in these figures. In prewar years 66% of all foods were imported and 34% were homegrown. In 1943, imports of food had dropped to 30% and 70% of all foods were grown at home.

New Communal Spirit

There were other results of the battle of the land. The British farmer had developed a new communal spirit, an enthusiasm for sharing of experiences and a desire to learn through and with his neighbors. New crops and methods, continually changing with the sweep of war, had brought farmers together everywhere to compare notes and exchange theories. Co-operation was the keynote.

"Neighbors' Day," for example, became one of the most popular and direct methods of contact. Discussion groups, meetings, lectures and demonstrations — all were important in the swapping of theories and opinions.

The British farmer had fought a battle, and he had won a victory.

GYROTILLER—One of the farm machines that was used by the British in their wartime efforts on the food front was the gyrotiller. The tiller of the machine (shown above) revolves and breaks up the ground.

FLOURS TO FIT EVERY FORMULA

★ Hard Spring Wheat
★ Hard Winter Wheat
★ 100% Whole Wheat
★ Cake Flours
★ Pastry Flours

A COMPLETE FLOUR SERVICE

RUSSELL-MILLER MILLING CO.
MINNEAPOLIS 1, MINN.
Millers of Occident, American Beauty and Other Bakery Flours

IF BUYING
MILO ★ KAFIR
Phone—Wire—or Write
Transit GRAIN COMPANY
FORT WORTH 1, TEXAS
Handling ALL OTHER GRAINS and FIELD SEEDS

FAMILY PATENTS
White Crest Red Crest
Cake and Pastry Flours
J. C. L.
Sponge Cracker Flour
The J. C. Lysle Milling Company
Leavenworth, Kansas

BLACK BROS. FLOUR MILLS
1863-1946
FLOUR 2,000 SACKS
STOCK FEED 250 TONS
WYMORE • NEBRASKA

ACME RYE
A HIGH QUALITY
WISCONSIN RYE FLOUR
All Grades
FISHER-FALLGATTER MILLING CO.
WAUPACA WISCONSIN

Bowersock Mills & Power Co.
LAWRENCE, KANSAS
ZEPHYR FLOUR
AS FINE A BAKING FLOUR AS A BAKER CAN BUY AT ANY PRICE
Established 1874

King Milling Company
High Grade Michigan Soft Wheat Flour, Plain and Self-Rising
Successful Millers for Fifty Years
LOWELL, MICHIGAN

Shippers of
WHEAT, RYE, CORN and OATS
FEED WHEAT and FEED BARLEY
BUNGE CORPORATION
280 NEW CHAMBER OF COMMERCE BUILDING
MINNEAPOLIS, MINNESOTA

"OLD SQUIRE"
Always is good flour. Pays no attention to ups and downs and this and that.
Just always GOOD FLOUR
Moore-Lowry Flour Mills Co.
Board of Trade Bldg. Kansas City, Mo.

STANDARD MILLING COMPANY
Millers of
• CERESOTA • ARISTOS
BAKERY FLOURS

Mother Hubbard Flour
FOR QUALITY, FLAVOR AND ECONOMY
Hubbard Milling Co.

I-H
QUALITY MILLED FLOURS
Ismert-Hincke Milling Co.
Kansas City, Mo.

"DIAMOND D"
A High Grade Baker's Spring Patent
Milled Under Laboratory Control from Montana Spring Wheat
Sheridan Flouring Mills, Inc.
SHERIDAN, WYOMING

We specialize in designing and engraving for Millers and the Grain Trade
Holland Engraving Co.
Kansas City, Missouri

Canadian and European News

★ ★ ★ ★ ★ ★ ★ ★

AS REPORTED BY OUR OWN STAFF OF CORRESPONDENTS

World Wheat Needs Exceed Supplies, Bureau Reports

Winnipeg, Man.—World's wheat requirements still appear to exceed export supplies although fairly satisfactory crops were harvested in many deficit areas this year, the Dominion Bureau of Statistics reports in its monthly review.

Cereal grain requirements will probably remain above prewar needs until livestock populations can be rebuilt and larger quantities of animal products become available to feed war-ravished countries.

During the last month the situation has been further aggravated by adverse crop reports from Australia and by a reduced estimate of the 1946 Canadian crop.

The current Argentine crop remains problematical and in any event a major part of whatever supplies Argentina may have for export has been contracted for by Brazil and Spain.

The United States harvested a bumper crop, but due to low carry-over into the new crop year, total wheat supplies for the 1946-47 crop year are about 135,880,000 bus less than in the preceding year. Transportation tie-ups induced by strikes and boxcar shortages have aggravated the situation still further by impeding the scheduled flow of export supplies from North America to deficit areas.

The second official estimate of production of Canada's field crops indicated a reduction of nearly 22,800,000 bus from the first estimate. Wheat production in the prairies now is placed at 398,000,000 bus, with the all-Canada figure standing at 418,758,000 bus. At Nov. 1 the estimated amount available, for export and carry-over, was 263,800,000 bus, according to the bureau.

An export goal of 267,000,000 bus of wheat and flour in terms of wheat has been set for the United States for the current crop year. This figure included 17,000,000 bus of 1946 wheat delivered after July 1 on the 1945-46 commitments.

Some domestic wheat traders are of the opinion that the United States may have to raise its export objective considerably, perhaps by 25%. Achievement of such an increase is theoretically possible since exports of only 267,800,000 bus would leave a carry-over of some 235,000,000 bus at the end of the crop year—a figure more than double this year's carry-over of 107,000,000 bus, the bureau said.

——BREAD IS THE STAFF OF LIFE——

VANCOUVER NOVEMBER EXPORTS SHOW GAIN

Vancouver, B. C. — Export grain shipments from this port in November totalled over 4,000,000 bus and constituted the heaviest month of the current grain season. During recent weeks there has only been a limited export clearance due to the small number of ships arriving, but this has been a blessing along other lines since it enabled local elevators to build up their stocks and at the same time permitted them to dry and clean the large amount of tough and damp grain arriving from the prairies.

Now elevator stocks here are up over 10,250,000 bus, the biggest figure in more than a year. The end of the week saw 18 deep sea ships in port to take grain cargoes and many more are nearing the port. Many British bottoms are now being routed here because of the acute grain shortage which has developed in Great Britain.

Export shipments so far this season stand at just under 12,000,000 bus, compared with 18,000,000 in the same period last season. In November this port moved just over 4,000,000 bus for export to show a small increase over the October movement.

——BREAD IS THE STAFF OF LIFE——

TRANSPORT SHORTAGES CUT GRAIN SHIPMENTS

Montreal, Que. — Harbor Board grain officials here announced on Dec. 1 that, because of inland transportation shortages, grain shipments through the Port of Montreal during the shipping season now closing dropped 37,000,000 bus under last year. Total exports for the year are expected to be about 66,600,000 bus compared with last year's 104,000,000. The big drop came despite a near-record number of ocean vessels in port during the eight-month season. The year's total of such ships was 751, an increase of 135 over 1945. Grain officials pointed out that the small movement should not be blamed too much on the transportation companies as it was believed they did all possible with the equipment they had on hand.

Britain Concerned Over Canadian Wheat Refusal

London, England. — The Canadian wheat contract is not working well, reports the Corn Trade News. "So far as price is concerned, it may temporarily appear that Britain has made a good bargain but we are not getting the wheat," says the publication. "The movement has been seriously delayed and Canada is not letting this country have more than the minimum 160,000,000 bus stipulated in the contract. A request for another 40,000,000 bus of Manitoba wheat has been refused. The contract gives us the right to buy additional quantities at $1.55 bu if the wheat is available."

A Reuter message states that a high Canadian government official has explained that one reason for Britain's bid being turned down is that the Canadian crop was 40,000,000 bus lower than estimated and that other traditional customers must be supplied.

This may be a case where the wheat contract is working to the disadvantage of Britain, for wheat sold to other countries is priced at $2.33 bu, compared with Britain's $1.55, but it is pointed out that Canada may consider she has done her duty to Britain in supplying 160,000,000 bus, which is considerably more than was normally imported from Canada prior to the war.

——BREAD IS THE STAFF OF LIFE——

McCARTHY MILLING CO. ANNOUNCES DIVIDENDS

Toronto, Ont.—J. J. Page, president of McCarthy Milling Co., Ltd., Streetsville, Ont., has announced the initiation of dividends of 27½c a share on the class A stock of the company and of 7½c a share on the class B shares, both payable Jan. 1, 1947. Sales and earnings for the 10 months ended Oct. 31 were ahead of the corresponding 1945 period and the outlook is for a continuance of these results in 1947. The McCarthy Milling Co., Ltd., became a publicly financed enterprise at the time of its purchase by Mr. Page from W. H. McCarthy and associates some months ago.

NEW POSITION—Robin Hood Flour Mills, Ltd., announces the appointment of C. E. Soward as assistant general manager with headquarters at Montreal. Mr. Soward has been connected with the milling industry for the past 26 years and brings to his new position a wide experience in the merchandising and distribution of flour and cereals.

——BREAD IS THE STAFF OF LIFE——

EXPORT SALES WHEAT TOTAL 1,000,000 BUS

Winnipeg, Man.—Export business in Canadian wheat and flour last week was less than 1,000,000 bus. Close to 500,000 bus were worked in the form of flour to the Far East, South America, West Indies, and British West Africa. The remainder was made up almost entirely of wheat to the United Kingdom.

——BREAD IS THE STAFF OF LIFE——

CANADA'S PRICE CEILINGS TO STAY, OFFICIALS SAY

Toronto, Ont.—Advices from Ottawa are emphatic in saying there is no truth in current daily press reports that the Canadian price ceilings are to be removed. On the contrary, they will remain pretty much as they are till they may safely be lifted. To take them off now or soon would create serious trouble. Commodities now under this form of control are still scarce and removal of the ceilings would easily result in runaway inflation.

What the government has indicated in its cautious references to the subject is that ceilings will come off when there is no longer a likelihood of runaway prices. Admittedly the ceilings must come off but this cannot be now or even soon since the goods to satisfy legitimate public demand are not available. There may be some hoarding under existing conditions but this is a lesser evil in comparison with what would happen to many price structures if the ceilings were removed.

Edinburgh Flour Miller Points Out Public Preference for White Bread

London, Eng.—The recent statement by Sir Jack Drummond, former scientific adviser to the Food Ministry, that white flour of the prewar variety will never return has been received with much skepticism in Edinburgh, as well as elsewhere in the British Isles.

Although Sir Jack pointed out that the 85% extraction from wheat was more nutritional, a leading Edinburgh flour miller, in expressing his views about the matter, says that the public definitely wants a return to the white loaf at the earliest possible opportunity. He further said that "consciously or unconsciously the public is aiming always to get the whitest bread."

In Ireland, he said, the "most ingenious methods" were employed to sift the brown material from the flour, all in an endeavor to get back to a whiter flour, and, consequently, a whiter loaf.

"We as millers have found, on the whole, that the public definitely insists that, no matter what the scientists say, their preference is for white flour, and our job is to give the consumer what he or she wants," he added. "The scientists may be correct from the nutritional point of view, but the public does not always agree and they have the happy knack of very often getting what they want, in this case a white loaf."

Co-op Tax Laws to Be Considered by Maryland Body

Baltimore, Md.—Approval in principle of the taxation of the income of co-operatives doing business in Maryland on the same basis as income from other types of businesses, with patronage dividends to be considered as income to the co-operatives, was voted Nov. 27 by the committee on taxation of the state legislative council.

Representatives of feed merchants were among those advocating such action before the state legislative council at earlier hearings.

It was unanimously voted by the committee to have legislation drafted for consideration by the 1947 Maryland legislature which would make effective the following proposal submitted by the Maryland Tax Equality Committee, Inc:

"Define taxable business income to include all income of co-operative businesses as well as private. Make sure that the provisions of the Maryland income tax law clearly include all earnings of all business, co-operative or private, before any distribution thereof, as taxable income."

Committee members agreed that such legislation should put reserves of co-operatives in the same category as reserves of other kinds of businesses.

In appearing before the state legislative council some time ago, Austin W. Carpenter, executive director of the Eastern Federation of Feed Merchants and northeastern regional manager of the National Tax Equality Association, charged that co-operatives have developed into "gigantic big business" and are a threat to private enterprise through the accumulation of "tremendous reserves" and the spread into manufacturing and other fields.

——BREAD IS THE STAFF OF LIFE——

MILLERS, CHEMISTS SEE FEDERAL RESEARCH LAB

Peoria, Ill.—Members of District No. 5 of the Association of Operative Millers and of the Central States Section of the American Association of Cereal Chemists were guests of the staff of the Northern Regional Research Laboratory here Dec. 6. The two technological groups were told of research projects under way at the federal laboratory and were taken on a tour of the large establishment. Pilot plant demonstrations constituted a part of the tour.

Dr. G. E. Hilbert, director of the laboratory, in a brief talk at the start of the day-long program, explained that the purpose of the laboratory is to find new uses for agricultural surpluses, rather than to develop new products that would only shift consumption, rather than increase it. For that reason Dr. Hilbert explained, much of the research at the laboratory is devoted to developing industrial uses, rather than food uses, for agricultural products.

There were approximately 50 millers and chemists present. George S. O. Smith, Valier & Spies Milling Company, St. Louis, and chairman of the program committee for the operative millers, turned the task of program chairman over to Joseph Shollenberger, head of the Commodity Development Division of the laboratory, who had arranged the program. All speakers were connected with the laboratory.

The following subjects were discussed briefly: Grain production and utilization, by Mr. Shollenberger; grain starches, by Miss M. M. McMasters; vitamins in grain, by F. W. Tanner; micro-organisms in grain, by William Haynes; wheat variety composition studies, by R. T. Milner; wheat use in alcohol production, by P. Burke Jacobs; batter process for gluten and starch separation, C. E. Rist, and pilot plant gluten drying investigations, C. T. Langford.

The laboratory is housed in a large, four-story building on the outskirts of Peoria and contains all of the equipment that any agricultural research scientist could want.

RED WHEAT SETS 26-YEAR HIGH AT CHICAGO

Chicago, Ill.—A car of wheat sold at $2.30 bu in the cash market on the Board of Trade Dec. 6, establishing a new 26-year high. The wheat bringing the highest price since 1920 graded No. 2 red. This is wheat used in producing biscuits and cakes, has been selling regularly at a premium over hard wheat. In 1920, cash wheat reached $3.50 on this market.

BAKING INDUSTRY PROMOTION FUND REACHES $430,000

Chicago, Ill. — A basic organization plan setting up committees to work on the proposed baking industry promotional program was adopted at the enlarged meeting of the American Bakers Association board of governors here Dec. 8-9. The promotion fund has now reached $430,000 per year for the three-year program. Plans were made at the meeting to carry on the fund-raising campaign even after it has reached the $500,000 goal set as the minimum for the program.

Boxcar Priority

(Continued from page 9)

J. Walter Holloway of the Kansas-Missouri River Mills, Kansas City, is gathering data on the current boxcar needs of the milling industry in this area. Grain trade data also is being compiled, and it is hoped that these figures will be helpful in allocating equipment.

Terminal elevator points in the six-state area affected by the order include Denver, Colo; Atchison, Hutchinson, Salina, Newton, Topeka, Whitewater and Wichita, Kansas; Kansas City, St. Joseph and St. Louis, Mo; Fremont and Omaha, Neb; Enid and Thomas, Okla; Amarillo, Dallas, Greenville, Plainview and Fort Worth, Texas.

Farm Grains Not Affected

It was pointed out by ICC officials that nothing in the permit order prevents the free flow of whole grains from country origins to trading points, as only movements to and from terminal elevators will be regulated. Elevators without CCC wheat will be issued 10-day blanket permits upon request of appointed ICC permit agents. This system will hold true for merchandisers and commission firms desiring permits for reconsignment of grain.

For elevators possessing CCC grain, 10-day permits also will be issued, but they will specify a certain number of cars which can be moved over and above CCC requirements.

A total of 1,800 cars per day has been requested of eastern lines to be delivered to the west at Chicago, St. Louis and Memphis Gateways. Out of whatever amount is received, the CCC plans to utilize approximately 350 cars daily. The remainder will be provided to commercial consignors who have permits issued by ICC agents.

Of the total amount of cars delivered to Western Gateways, all are not expected to be suitable for grain movement. Boxcars, gondolas and slatted stock cars will be sorted out for delivery to the CCC and the grain trade.

——BREAD IS THE STAFF OF LIFE——

GTA NET WORTH INCREASED TO $10,000,000 IN '45-'46

St. Paul, Minn.—Farmers Union Grain Terminal Association made net patronage savings of $3,649,000 for the past crop year, M. W. Thatcher, general manager, reported at the ninth annual stockholders' meeting of the co-operative in the Lowry Hotel, St. Paul, this week.

The savings, which are allocated to patrons in preferred stock, include the 10% permanent reserve required by law, and cover the 1945-46 season, he stated. The savings brought the net worth of the co-operative to more than $10,000,000.

In making his report to more than 3,000 farmers, who were in for the three-day meeting beginning Dec. 10, Mr. Thatcher said that the association now operates co-operative properties in eight states. These properties consist of grain elevators, including terminal, subterminal and ordinary country type, lumber yards and a durum wheat mill.

Office operations of the GTA soon will be housed in a single new office building in St. Paul on which construction is almost completed.

Farmers, he said, are showing more concern over the uncertain price outlook. He urged enactment of pay-as-you-go farm legislation, with price stabilization based on a two-price system. He declared that costs should be underwritten by a special levy on commodities, which would be administered by the government, to cover any losses. The association has supported the proposed National Agricultural Relations Act as covering such a program.

F. H. LaGuardia, director general of UNRRA, was scheduled to talk at the Dec. 12 evening meeting in the St. Paul municipal auditorium.

——BREAD IS THE STAFF OF LIFE——

OTTO G. HERDIT RESIGNS FROM PETERSEN OVEN CO.

Chicago, Ill.—Otto G. Herdit has resigned his position with the Petersen Oven Co., where he served as a director and vice president in charge of sales.

Mr. Herdit's association with this company extends over a period of 30 years and he is well known to bakers in all parts of the country. He is a member of the Bakers Club of Chicago and the Chicago Bakers Courtesy Club. Mr. Herdit has not yet announced his plans for the future.

ROBIN HOOD MILLS TO ADD CAPACITY AT HUMBERSTONE

Humberstone, Ont.—The capacity of the Robin Hood Flour Mills plant here is being increased by 2,500 bbls daily, officials of the company have announced. The new structure will be 41 by 112 feet and 81 feet high. Contractor for the work is Carter Construction Co., Ltd., of Toronto. C. D. Howe Co., Ltd., did the architecture and engineering work.

The Humberstone plant of Robin Hood Flour Mills has been visited by milling technologists from all parts of the world and the mill is considered to be one of the finest flour manufacturing plants in the Americas. The plant is completely air conditioned.

——BREAD IS THE STAFF OF LIFE——

FLASH FIRE DESTROYS PEANUT BUTTER PLANT

Fort Worth, Texas.—A flash fire of undetermined origin destroyed the peanut butter plant of the Kimbell Food Products Co. here, Dec. 4. The firm is owned by the Kimbell Milling Co. The fire entailed a loss of $100,000, including some equipment declared to be irreplaceable.

None of the 40 to 50 employees were injured and the flames were prevented from spreading to adjacent buildings which house a jelly and preserve canning plant and a peanut shelling plant. No announcement has been made as to rebuilding plans.

——BREAD IS THE STAFF OF LIFE——

REGION DESIGNATION CHANGED

Minneapolis, Minn.—A change in designation of the former Memphis region of Pillsbury Mills' grocery products sales and bulk products sales departments to the South Central region has been announced by Paul S. Gerot, vice president, flour and cereal division. Regional headquarters will continue to be maintained in Memphis, Mr. Gerot explained, with W. G. Harris as regional manager of grocery products sales and C. C. Smith as regional manager of bulk products sales.

——BREAD IS THE STAFF OF LIFE——

Bonded Grain in the United States

Stocks of bonded grain in the United States as compiled by the secretary of the Chicago Board of Trade, Nov. 30, 1946 (000's omitted).

	Wheat	Oats	Rye	Bar'y
Baltimore	..	..	..	..
Buffalo	3,022	1,086	595	426
Afloat	..	..	462	476
Chicago	..	..	209	..
Afloat	..	..	268	..
Duluth	..	..	149	159
New York	266	..	..	..
Afloat	85	..	..	..
Philadelphia	679	..	..	..
Lakes	..	..	..	280
Totals	3,992	1,086	1,683	1,341
Nov. 23, 1946	4,430	772	784	566
Dec. 1, 1945	25,281	4,330	425	697

CONTRACTS ON PROMOTION PLAN SUBSCRIPTIONS

★

Contracts on file for subscriptions to the proposed publicity and advertising program of the milling industry cover an estimated 113,000,000 sacks of 1945 domestic flour production, according to a recent announcement by the Millers National Federation. The exact total is not available because several companies have sent in contracts before calculating their domestic production, the announcement said. Contracts have been received from mills located in 15 states.

MILLERS FROM CHINA—C. D. Lee (left) and R. Z. Yung, both of Shanghai, China, are shown above, admiring a picture of the Buffalo plant of the International Milling Co. that hangs in the office of Charles Ritz, president of the company. They were entertained by the International company's officers in Minneapolis. The two men, officers of the Moh Sing & Foh Sing Flour Mills, are making a three-month tour of the United States and Canada to study American management and administrative methods. Mr. Lee reports that the company's flour mills in Shanghai, Wusih, Tsinanfu and Hankow, which maintained a prewar capacity of 25,000 bbls daily, are now producing at the rate of 20,000 bbls in the 10 large remaining mills. The loss of 5,000 bbls capacity was due to Japanese destruction of two mills at Wusih, one of them the first Moh Sing unit, built 50 years ago. Mr. Yung said that at the time he left China, a 49-lb sack of flour cost $14,000 in Chinese currency, which at the present rate of exchange of $2,000 Chinese for $1 U. S., is $7 per sack in U. S. currency.

MOSTLY PERSONAL

Martin J. Pendergast has been chosen by the directors of Lever Bros. Co. as secretary to succeed **Floyd S. Davis,** who has retired after 26 years with the organization, **Charles S. Luckman,** president, has announced. Mr. Pendergast was made assistant secretary in 1933 and has been associated with the company since 1923.

●

Charles Ritz, president of International Milling Co., and **Harry A. Bullis,** president of General Mills, Inc., Minneapolis, attended the recent convention of the National Association of Manufacturers in New York City.

●

G. S. Kennedy, vice president of General Mills, Inc., Minneapolis, was a recent visitor at the company's New York offices.

●

Floyd McRae, general sales manager for Igleheart Bros., Inc., Evansville, Ind., called on millers in Kansas City last week.

●

O. M. Friend of Hannibal, Mo., Larabee Flour Mills Co. representative, visited the mill's headquarters in Kansas City last week.

●

Roy H. Addington, Atlanta flour broker, celebrated his sixty-second birthday Dec. 3. Mr. Addington has been in the flour business for 45 years and has many connections throughout the country.

●

Capt. Gordon L. Payne, Jr., son of **Gordon L. Payne,** Atlanta, representative for the Nebraska Consolidated Mills Co., is studying a course in engineering at the Army Air Forces Institute of Technology at Wright Feld, Dayton. During the war Capt. Payne flew 70 missions as a pilot with a B-26 group in England and France.

●

C. M. McMillan, former secretary of the Southern Bakers Association, who is now executive secretary of the National Candy Wholesalers Association with headquarters in Washington, D. C., accompanied by his family, will spend the Christmas holidays with relatives in Camilla, Ga. Mr. McMillan will be in Atlanta Dec. 20.

●

P. D. Hays, Valier & Spies Milling Co., St. Louis, was calling on the Illinois trade last week.

●

Burleigh W. Fincken of England, British representative of Hornby's oats products for about 30 years, with Mrs. Fincken and their son Brian, visited the Buffalo plant of Best Foods, Inc., Dec. 6. They are planning to visit the company's plant at Ayr, Ont., before returning to England.

●

Harry R. DeVore, principal in H. W. DeVore & Co., grain, Toledo, has returned from a visit to Chicago and the International stock show.

●

Visitors to Chicago office of the Millers National Federation last week included **D. A. Williams,** president, and **J. R. Green,** assistant secretary-treasurer, of the Williams Bros. Co., Kent, Ohio; **P. H. Postel,** president, Ph. H. Postel Milling Co., Mascoutah, Ill; **Dr. M. L. Wilson,** director of extension for the U. S. Department of Agriculture; **C. E. Baker, Jr.,** general manager, Co-operative Mills, Inc., Auburn, Ind., and **Rudolph Nelson** of the research and product development, Pillsbury Mills, Inc., Minneapolis.

●

R. K. Durham, technical director of the Millers National Federation, attended a meeting at the Northern Regional Research Laboratory of the U. S. Department of Agriculture in Peoria on Dec. 6, and spent a few days thereafter in Alton, Ill., and Kansas City calling on mills.

●

Dr. Per K. Frolich has been appointed to the newly-created post of co-ordinator of research for Merck & Co.

●

Hubert C. Edwards, of the Higginsville (Mo.) Flour Mills, was a visitor in Chicago last week.

●

Logan P. Johnson, sales manager, Atkinson Milling Co., Minneapolis, called recently on Cleveland connections. Another Cleveland visitor was **A. P. Cole,** Pittsburgh broker.

●

O. J. Zimmerman, Oklahoma City, superintendent of manufactures for the southwestern division of General Mills, Inc., has returned from a business trip to Texas cities. **Lee Merry,** district sales manager for the company, visited the Louisiana trade recently.

●

Harry A. Bullis, president of General Mills, Inc., Minneapolis, has been appointed regional vice president of the National Association of Manufacturers for Minnesota, Wisconsin, North Dakota and South Dakota. He succeeds **Walter Geist,** president of Allis-Chalmers Mfg., Milwaukee.

●

Recent nominations for consideration for places on the directorate of the Oklahoma City Chamber of Commerce were **J. S. Hargett,** president of the southwestern division of General Mills, Inc; **Earl E. Nichols,** treasurer of Merit Mills; **T. B. Hendrick,** treasurer Collins-Dietz-Morris wholesale grocers, and **B. D. Eddie,** general manager of the Superior Feed Mills.

●

A. L. Jacobson, retired president of the Arnold Milling Co., Sterling, Kansas, has gone with Mrs. Jacobson and their son James to Glendale, Cal., where he intends to make his home.

●

G. E. Erickson, bulk products branch manager for Pillsbury Mills Inc., at Boston, and **S. H. Wendorf,** bulk southwestern regional manager, with headquarters in Kansas City, were recent Minneapolis visitors.

●

W. R. Heegaard, vice president of the Russell-Miller Milling Co., Minneapolis, will again be the co-chairman of the Industrial Division of the 1947 Civic Fund Campaign.

●

Jack Willis, president and general manager of the Thomas Page Milling Co., Topeka, Kansas, spent a day in Cleveland recently with the company's broker, **H. W. Tibbals** of Elyria.

●

Harold Regier, Buhler (Kansas) Mill & Elevator Co. sales manager, mixed business and pleasure on a flying trip to Memphis to confer with **Milton Buhler,** southeastern states sales manager. On his return he stopped for a day of duck hunting in Arkansas and reported great success.

NBC APPOINTMENT — Russell M. Shultz has been elected vice president in charge of production and research of National Biscuit Co., it has been announced by George H. Coppers, president. Mr. Shultz joined the company in 1926 as an analytical chemist. Later he managed some of the largest Nabisco Cracker bakeries. Previous to the present appointment he was director of research. R. K. Hower has been appointed director of research.

—BREAD IS THE STAFF OF LIFE—

VERNON S. TUPPER DIES IN NASHVILLE

President of Nashville Roller Mills Dies at 66 After Short Illness

Nashville, Tenn.—Vernon Southall Tupper, Sr., president and general manager of the Nashville Roller Mills, died in St. Thomas Hospital here recently after a short illness. He was 66 years old.

Mr. Tupper joined the Tri-State Milling Co. as branch manager, opening an office for the company in Norfolk, Va., after his graduation from the University of the South at Sewanee, Tenn. In 1904 he was transferred to Nashville as assistant secretary. When the firm was disbanded in 1908, he organized the Nashville Roller Mills, the first flour blending business of the South. He was secretary and general manager of the firm until 1939, when he was made president and general manager. The Schultz-Baujan interests of Beardstown, Ill., were associated with him in the business.

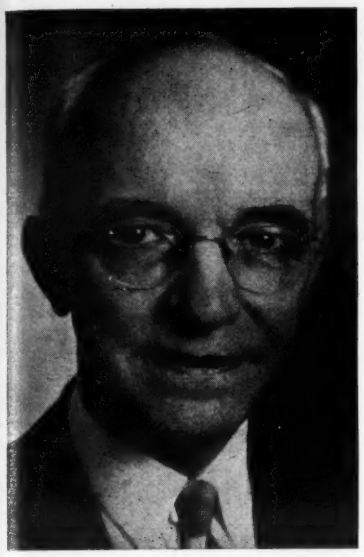
A member of the OPA Flour Milling Industry Advisory Committee during the war emergency, Mr. Tupper was also active in the affairs of the Self-Rising Flour Institute, Inc., of Nashville, the organization of flour blenders.

He is survived by his widow, a son, Vernon S. Tupper, Jr., and a daughter, Mrs. William W. Morehead, Jr.

—BREAD IS THE STAFF OF LIFE—

JOINS LEWIS GRAIN CORP.

Buffalo, N. Y. — David J. Stouten has joined his father, John B. Stouten, secretary and treasurer of the Lewis Grain Corp., as his assistant. David Stouten was recently appointed a director and assistant secretary of the Monarch Elevator Corp., here, after his discharge from the navy.



Harry C. Schaack

CHICAGO TRADE BOARD NOMINATES OFFICERS

Harry C. Schaack Renominated for President of Exchange on January Election Slate

Chicago, Ill.—Harry C. Schaack, who has served as president of the Chicago Board of Trade for the past two and one half years, was renominated recently on the regular slate of candidates for officers of the exchange. The annual election will be held Jan. 13.

Richard F. Uhlmann was renominated to fill the position of first vice president and G. Willard Hales was nominated for second vice president. Nominated as directors to serve for terms of three years each were Earle M. Combs, Jr., Sylvester J. Meyers, Frank A. Miller and Thomas E. Hosty.

The fifth post went to James E. Skidmore.

Wallace Templeton and Edward A. Green were nominated to fill the two vacancies on the nominating committee slate. Nominated for the Appeals committee were Clinton S. Beach, Charles D. Olsen, Eugene F. Havey, Edward J. Kazmarek and George B. Denniston. For the five vacancies on the committee on arbitration, the following were selected: John E. Brennan, John E. Wall, Raymond A. Gerstenberg, Laurence H. Peiterson and Raymond C. Templeman.

——BREAD IS THE STAFF OF LIFE——

SEVEN FARMERS RECEIVE PILLSBURY AWARDS, CASH

Chicago, Ill.—Growers of prize-winning samples of different types of wheat were honored at a dinner held here Dec. 6 by the Philip W. Pillsbury Agricultural Achievement Award Committee.

P. H. Rasmussen and his wife were brought to Chicago from Logan, Utah, by plane so that they might receive the national wheat championship award and cash prize personally. Others present, and the awards they received, included:

John C. Wilk, Alma, Mich., Pillsbury Reserve Award, for his sample of white winter wheat; Eldred Murphy, Salina, Utah, white spring wheat; W. F. Renk, Sun Prairie, Wis., soft red winter wheat; Andrew Robbie, Cavalier, N. D., hard red winter wheat; L. E. Peterson, Victor, Mont., durum wheat, and H. L. Stiegelmeier, Normal, Ill., soybeans.

The Pillsbury Awards, consisting of trophies and cash prizes, were presented by Allan Moore, vice president of Pillsbury Mills, Inc.

——BREAD IS THE STAFF OF LIFE——

MARTIN WISE EMPLOYED BY PRESTON-SHAFFER CO.

Walla Walla, Wash.—The appointment of Martin Wise to the research and products control department of Preston-Shaffer Milling Co. has been announced by P. I. Welk, general manager of the company.

Mr. Welk said that Mr. Wise will make his residence at Pendleton, Oregon, where the company operates a 3,000-sack plant. "His efforts will be directed toward products research and will supplement our present laboratory staff and mill control, which will be unchanged from what it has been in the past," Mr. Welk added.

Mr. Wise has been connected with the milling industry since 1929. He has been associated with the Colorado Mill & Elevator Co. at Denver for the past two years, having been chief chemist. Prior to that time, he was with American Flours, Inc., Newton, Kansas.

——BREAD IS THE STAFF OF LIFE——

R. K. DURHAM TO DISCUSS NEW INSECT TOXICANTS

Minneapolis, Minn.—R. K. Durham, director of the technical service department of the Millers National Federation, Chicago, Ill., will discuss new insect toxicant developments at a meeting of the Northwest Section, American Association of Cereal Chemists, to be held in the clubroom of The Northwestern Miller Dec. 13.

Due to the limited seating capacity of the clubroom, attendance will be limited to the first 50 reservations received, B. A. McClellan, chairman of the section, has notified members.

Mr. McClellan asks that out-of-town members send reservation requests to him at the International Milling Co.

DEATHS

Robert S. McCarl, 63, died of a heart attack in a Walla Walla, Wash., hotel last week. Mr. McCarl during World War I was export manager of the old Portland (Oregon) Flouring Mills Co., which ran into financial difficulties after the war. Later he was in the grain and feed business, and a well-known figure in Pacific Coast flour and grain circles for many years.

Leo Francis Appleton, 52, plant superintendent at Minneapolis for Spencer Kellogg & Sons, Inc., died Dec. 6. He had been ill only a few hours, so his death came as a distinct shock to his business associates. Mr. Appleton came to Minneapolis a little over a year ago from Edgewater, N. J. He is survived by his widow.

Arlow E. Bisby, 70, who was associated with the Mid-West Milling Co., Abilene, Kansas, died recently at Wichita, Kansas. He formerly resided in Wichita, where funeral services were conducted and interment made.

William J. Ferries, co-owner of the Royal Pies Co., La Crosse, Wis., died at his home recently. Burial was Dec. 2.

Mr. and Mrs. O. D. Fisher

Mr. and Mrs. O. D. Fisher Get Shower of Golden Wedding Congratulations

Seattle, Wash.—A shower of congratulations from friends of the family and from close personal acquaintances and associates in the flour milling industry and in various civic and commercial circles descended upon O. D. Fisher and his wife on Dec. 10 as they observed their golden wedding anniversary. They were married at Cape Girardeau, Mo., in 1896.

Mr. Fisher is president of the Fisher Flouring Mills Co. of Seattle, which, with other members of his family and with business associates, he organized in 1910, at which time he became secretary and manager of the company, succeeding to the presidency in 1922. For many years he has been prominently concerned with trade association affairs, notably in the Millers National Federation, of which he was president in 1937. He is now in his twenty-eighth consecutive year of service as a director. He was a charter director and vice president of the Flour Millers Export Association and is past president of the Washington Millers Association and its successor, the North Pacific Millers Association.

From 1896 to 1903, Mr. and Mrs. Fisher made their home in Birch Tree, Mo., where their two daughters, Mrs. Donald G. Graham and Mrs. John L. Locke, were born. Mr. Fisher then was assistant manager of the Cordz-Fisher Lumber Co. Moving to Bozeman, Mont., he took charge as secretary and manager of the Gallatin Valley Milling Co.'s mill at Belgrade, Mont. With other members of the family, Mr. Fisher was also interested in the Fisher Mercantile Co., operating Golden Rule retail stores at Bozeman, Missoula, Great Falls and Red Lodge, Mont. On moving to Bozeman, he became interested as a director of the Gallatin State Bank.

In 1906 Mr. Fisher went to Seattle and was instrumental in organizing the Grandin-Coast Lumber Co., of which company he was secretary and manager. In 1907 he joined M. A. Arnold, David Moss and others in acquiring stock and management control of the First National Bank of Seattle, and became a director and member of the executive committee, in which capacity he has served continuously with that bank and with its successor, the Seattle-First National Bank. In 1907 he also became interested in and a director, vice president and treasurer of the Metropolitan Building Co. He has been continuously since then a director, vice president and member of the executive committee of that company.

The Fisher Mills

The Fisher Flouring Mills started operating April 11, 1911, with its first unit of 1,000 bbls daily capacity, and on June 1, 1911, held opening ceremonies, at which time the second unit was put in operation, giving a total capacity of 2,000 bbls. On Oct. 1, 1917, the company put into operation three additional units, giving it an aggregate capacity of 5,000 bbls. The present capacity is 6,000 bbls, or 12,000 100-lb sacks. There is also a substantial capacity of specialty feeds, cereals, ready baking mixes, etc.

The plant is strategically located on the southwest corner of Harbor Island, Seattle, served by four transcontinental railroads, and with almost a quarter mile of waterfront facilities for the largest vessels plying the Pacific Ocean that can dock alongside the terminal facilities at the plant.

Affiliated Companies

Affiliated with the Fisher Flouring Mills Co. are the Gallatin Valley Milling Co., with a mill and elevators in Montana; the White-Dulany Co., a grain company, and the Milwaukee Grain Elevator Co., operating elevators and warehouse facilities in eastern Washington and Idaho. These affiliated companies operate between 75 and 100 elevators and warehouses throughout the grain belt in Montana, northern Idaho and eastern Washington, primarily for serving the grain needs of the flour mills at Seattle and Belgrade, Mont., with a storage capacity at their terminal elevator at Seattle of 2,500,000 bus, and between three and four million bushels in country elevators and warehouses.

The plant at Seattle, with five complete units for manufacturing flour and a complete cereal unit, is probably unique in the milling industry, since it can manufacture at one time six complete, separate and distinctly different wheat mixes, and its aggregate capacity is the largest of any single flouring mill plant west of the Mississippi River.

On the organization of the General

Insurance Co. of America in 1923, Mr. Fisher became director and chairman of the board, and later, as the General Casualty Co. of America, First National Insurance Co. of America and the American Insurance Agency were organized, he became director and chairman of the board of each of these companies, and has continued as such to date.

Radio Adventure

In 1927 Mr. Fisher was instrumental in organizing Fisher's Blend Station, Inc., of Seattle, which placed radio station KOMO on the air. He became president of Totem Broadcasters in connection with the servicing of programs for the radio station.

In 1914 the Grandin-Coast Lumber Co. merged with Weyerhaeuser Timber Co. certain timber adjacent to Snoqualmie, Wash., and the Snoqualmie Falls Lumber Co. became owner and operator of the sawmill plant at Snoqualmie Falls. Mr. Fisher has been director, vice president and treasurer of that company since its organization. Since 1922 he has been director and president of Louisiana Long Leaf Lumber Co. at Fisher, La., and a director of the Exchange Sawmills Sales Co. of Kansas City, Mo.

Mr. and Mrs. Fisher make their home at 1047 Belmont Place, Seattle 2, Wash. In addition to their daughters, Mrs. Graham and Mrs. Locke, they have five grandchildren and two great grandchildren.

BREAD IS THE STAFF OF LIFE

Prices of Bread Unchanged, Other Items Up, Check Shows

A spot check made by correspondents in various markets over the country indicates that bread prices have been generally unchanged since price controls were removed from bakery products. Prices of bakery products other than bread, however, are reported to have been increased from 10 to 20%.

At Portland, Oregon, bread prices were reported to have been increased 1c a loaf on Nov. 25.

Rising costs of ingredients and other factors in production have been cited as causes for the increases reported. Bakers are generally agreed, however, that increases in the price of such a basic commmodity as bread would not be accepted with continued good will on the part of the consumer.

Some falling off in demand for bakery products on which prices have been increased following decontrol is reported. Generally, however, demand for bakery items continues excellent, according to the reports.

Summaries of the reports from the areas studied in the spot check follow:

New York Area

New York, N. Y.—The chief price changes in baked goods have been the immediate readjustments from the 10% reduction in loaf weight required by law, which in many localities brought loaves below requirements of state and local ordinances. Some bakers also increased the weight where it was not obligatory to make a loaf better suited to their equipment.

Slightly higher adjustments have been made where items ran in the red because of higher ingredient costs but bakers are moving very slowly on higher prices. There is a definite consumer resistance to advances with a trend toward conservative purchasing. All grocery sales in November have slowed down, reflecting the holidays and there has been a slackening on purchases of "luxury items."

Prices were raised by biscuit manufacturers the 15% permitted by the government in August. Since decontrol these prices have generally advanced about 10% because of the great advances in sugar and shortening.

Chicago Area

Chicago, Ill.—Bread prices have not been changed in the Chicago area since decontrol. Practically all bakers, both wholesale and retail, continue to sell bread at the prices which prevailed prior to decontrol. Wholesale prices of some other bakery products, such as doughnuts, sweet rolls and coffee cakes, have been increased. Not all bakers have increased prices on all these products, but those who have not are contemplating such a move shortly.

Retail bakers are selling bread at the same price, but prices on pies, doughnuts, coffee cakes and sweet rolls have been advanced. Prices are up from 10 to 20%. Many bakers advanced the prices on cakes some time ago, and have not made another increase.

It is evident, however, that the bakers who increased prices sharply have noticed a slight falling off in sales, averaging from 5 to 10%.

Retail bakers in the main say business is getting back to normal, and the hysteria buying has disappeared entirely.

Sugar is still tight, but there has been a slight change for the better in the supply of shortening and lard. Prices have also softened a little. Bakers also look for a good Christmas trade, although some expect it to fall below a year ago, due to a larger supply of other products being offered.

Milwaukee Area

Milwaukee, Wis.—Bakery prices in Milwaukee and for the state of Wisconsin as a whole have advanced between 10 and 15% since decontrol of prices, Fred Laufenburg, secretary of the Wisconsin Bakers Association, Inc., reports. In most cases the wholesalers made the advances. Retailers, Mr. Laufenburg explained, had readjusted their prices upward sometime ago under the regular Office of Price Administration revision period.

The increased prices are principally on products other than bread, which, as far as can be determined, has not been increased up to the present time.

Increases made thus far, industry spokesmen point out, do not cover the sharp price advances in flour, shortenings and other ingredients in recent months. It is estimated that raw material gains amount to from 25 to 50%.

However, it is believed by bakers in this area that readjustments will bring prices down to such a level that the 10 to 15% increases made in prices of bakery products will be adequate for profitable operations.

Atlanta Area

Atlanta, Ga.—While there may be isolated cases where bread prices have advanced, bakers generally have not raised the cost of bread in the Atlanta area since the lifting of controls. They are frank to admit that with higher ingredient and operation costs, it would not be out of line to advance the price of bread, but they apparently do not think it would be expedient.

There is the good will of the housewife to be kept, they point out, and although the public may spend money freely for so-called "luxury items," there would probably be a loud protest at paying more for bread.

The chief interest of bakers in this area seems to be in being able to again bake higher quality products for the consumer at a fair price. In the meantime, they are trying to hold to present levels with the hope that the near future will bring more normal conditions, which in turn will bring them nearer their goal.

Minneapolis-St. Paul Area

Minneapolis, Minn.—Prices of bakery products have advanced approximately 10% since decontrol, according to reports of industry spokesmen here. These price increases, however, have been in most cases on products other than bread.

Demand for bakery products is reported to be excellent and bakeshops report that specialty items are quickly sold out. Supplies of bakery items are limited because of the continued scarcity of ingredients.

Duluth Area

Duluth, Minn.—Duluth bakers are complaining about the increased price of shortening. The larger bakeries are striving to hold the line on the price of rolls, cookies and all sweet goods but if the price of fats does not show any sign of coming down, they say it may be necessary to raise the price of these goods.

As a rule the smaller bakeries have advanced prices on these goods in order to meet increased overhead expenses.

All bakers appear to feel that the prevailing price of bread is as high as consumers can stand and are reluctant to make any further hike in bread prices.

Kansas City Area

Kansas City, Mo.—No evidence of bakery goods price trends in either direction is apparent in the southwestern area, although it appears that in some markets the return of larger loaves that were dropped during the war control period took place on the basis of a slightly lower price, comparatively. In other respects also, the baking industry in this area appears to be "holding the line" on trade practices. Stales control appears to be reasonably good, bolstered by the shortage of fats and sugar. In some markets twist bread has reappeared and in a few spots the majority of the industry appears to be twisting, despite the sharp cost increases that such production methods incur. For the area as a whole, however, only a small minority has resumed that practice.

Portland (Ore.) Area

Portland, Oregon.—Bread prices in this area were increased 1c on Nov. 25. In some shops it was across the board on all breads; in others only on the 1½-lb loaf. Not all shops followed the rise immediately, however. On the other hand a few had already gone up independently.

Industry spokesmen expressed hope that no further bread increases would be necessary, although slight increases may be required in other bakery products, up to 15 to 20% since decontrol, to "subsidize" bread.

Fred Kappel, Kappel's Old Holland Bakery, commented, "We should not get any more for bread because it is a basic food."

Oregon state law requires that bread be produced in 16- or 20-oz loaves, or multiples thereof. The last Office of Price Administration price was based on the "emergency" 14-oz loaf size, and the industry felt that an increase was in order when the state law again came into effect after decontrol.

BREAD IS THE STAFF OF LIFE

SALES MEETING—Thirty-three sales representatives of the Bemis Bro. Bag Co. met at the company's general offices in St. Louis recently to attend a one week training conference. The instructors are shown in the first row of the picture with the sales representatives behind them.

NO HOLIDAY INCREASE IN SUGAR EXPECTED

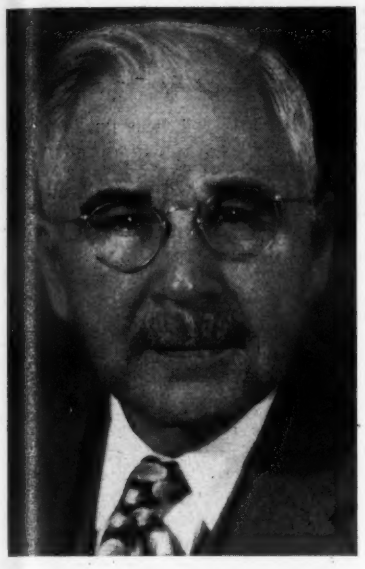
Washington, D. C. — Indications that American bakers and housewives would receive increased sugar allocations for the Yule holiday season appear quite dim but government officials have hinted that the rumored boost from 60 to 80% of 1941 usage for industrial users and from 25 to 35 lbs per individual consumer would probably go into effect around the first of the year.

PURINA APPOINTS THREE MEN AS VICE PRESIDENTS

St. Louis, Mo.—Announcement of the appointment of three new vice presidents of the Ralston Purina Co. has been made by Donald Danforth, president of the company. The new officers are Ralph E. Smith, general manager of the cereal department; J. D. Sykes, director of public relations, and F. W. Huntington, director of personnel administration.

STAFF CHANGES MADE BY VICTOR CHEMICAL WORKS

Chicago, Ill.—Realignment of executive responsibilities of the senior officers of Victor Chemical Works, major producer of elemental phosphorus, phosphates and other industrial chemicals, was announced by the board of directors recently, as a step in preparation for greatly expanded



August Kochs

uses of phosphate chemicals by virtually every key industry.

August Kochs, co-founder of the company in 1897 and its president since 1910, will become chairman of the corporation on Jan. 1, when all of the changes are effective.

Walter B. Brown, executive vice president, will succeed Mr. Kochs as president and chief executive officer.

Rothe Weigel, vice president, becomes executive vice president.

William D. Webster, secretary, will assume new duties as vice president in charge of finance, continuing as controller.

Otto H. Raschke, director of sales, becomes vice president in charge of sales.

T. G. Everett, assistant secretary, becomes secretary succeeding Mr. Webster.

Victor Chemical Works currently has a large expansion program under way with the construction of an elemental phosphorus electric furnace plant at Victor, Fla., in the Tarpon Springs area. The plant, behind schedule because of strikes in plants of equipment manufacturers and shortages of essential building materials, will house the largest electric furnace in the nation. Other Victor plants are: an elemental phosphorus electric furnace plant at Mount Pleasant, Tenn., and phosphate and industrial chemical plants at Nashville, Tenn., and Chicago Heights, Ill.

Walter B. Brown

Otto H. Raschke

—BREAD IS THE STAFF OF LIFE—

50% HIGHER STANDARD OF LIVING PREDICTED

Samuel C. Gale Gives Minneapolis Advertising Men an Estimate of the Industrial Future

Minneapolis, Minn.—The Advertising Club of Minneapolis, at its weekly meeting on Dec. 4, was addressed by Samuel C. Gale, vice president and director of advertising and public relations of General Mills, Inc., on the subject, "Tomorrow's Advertising." The meeting was well attended by representatives of Minneapolis milling companies, although the subject had no reference to the products of mills, but was general in its scope.

Mr. Gale, who has had 27 years of advertising experience with General Mills, has been invited by advertising clubs in various sections of the country to speak on this subject. His theme emphasized again the higher standard of living which is anticipated, and which has been the emphasis of many groups. His estimate is that postwar years will see a 50% higher standard than the prewar years, which must not be interpreted in terms of dollar income, he says, but rather that the average individual will be able to purchase with his postwar dollars earned 50% more than his prewar earnings would have purchased in terms of goods and services, and that this increased standard will be reflected throughout industry.

The question which was left unanswered in a recent meeting of the National Association of Manufacturers, as to what portion of this increased business would result in benefits to the owners and what portion to the workers, was answered. Mr. Gale said that the largest share of this increase in productivity should go to the consumer and that the share which is enjoyed by management and the workers will follow the accepted pattern of $1 to the owner of results of business, to $7 for the worker.

In his analysis of business, Mr. Gale placed production as one third of all business—distribution somewhat more than one third, and unrelated services somewhat less than one third. He said that advertising is largely concerned with the distribution end of business and represents less than 10% of the distribution share—advertising being to distribution what the machine is to production.

With increased educational standards as compared with the years following World War I, there is evidence of a skepticism as to advertising that may or may not be deserved, Mr. Gale said, but it is a challenge to advertising to keep itself fruitful, informative and educational, and to perform its service through being newsworthy and a genuine service to the consumer. Primarily, he reminded his hearers, advertising is a consumer medium.

Advertising, concluded Mr. Gale, has contributions to make to business through acceleration of turnover, promotion of the effectiveness of retailing, in assisting in the function of selection, and in many other ways. He feels that it is a tool that in the years ahead will find many new media, and will develop techniques as yet unexplored.

—BREAD IS THE STAFF OF LIFE—

BOARD DECIDES TO STAY WITH COMMODITY GROUP

Kansas City, Mo. — The board of directors of the Kansas City Board of Trade last week reversed a previous decision to withdraw from the National Association of Commodity Exchanges and Allied Trades, Inc., and are now taking steps to renew their membership.

—BREAD IS THE STAFF OF LIFE—

MIDWEST CLUB PLANS CHRISTMAS LUNCHEON

Kansas City, Mo.—A stag Christmas buffet luncheon will be held for members and guests of the Midwest Bakers Allied Club in Kansas City, Dec. 16. Luncheon will be served between 12:30 and 2:20 p.m. in the Aztec Room of Hotel President. Reservations are now being accepted by Miss Ruth Ann Smith, executive secretary of the club, at the President.

WFO 144, Amdt. 21

PART 1468—GRAIN MISCELLANEOUS AMENDMENTS

War Food Order No. 144, as amended (11 F. R. 6750, 7332, 7563, 7738, 7999, 8214, 9551, 10819, 12522, 13508) is hereby further amended by deleting paragraphs (d), (h), (j), (k), (l), and (x).

This amendment shall become effective at 12:01 a.m., E.S.T., Dec. 1, 1946. With respect to violations, rights accrued, liabilities incurred, or appeals taken, prior to said date, under War Food Order No. 144, as amended, all provisions of said order shall be deemed to remain in full force for the purpose of sustaining any proper suit, action, or other proceedings, with respect to any such violation, right, liability or appeal.

(E. O. 9280, Dec. 5, 1942; E. O. 9577, June 29, 1945; 7 F. R. 10179, 10 F. R. 8087.)

Issued this 29th day of November, 1946.

CLINTON P. ANDERSON,
Secretary of Agriculture.

—BREAD IS THE STAFF OF LIFE—

UPPER MICHIGAN BAKERS JOIN WISCONSIN GROUP

Milwaukee, Wis. — A request of Michigan Peninsula bakers to become affiliated with the Wisconsin Bakers Association, Inc., because of "geographical advantages" has been approved by the board of governors of the Wisconsin group, which has designated the new group as the "Upper Michigan Group" and District No. 5.

At a meeting of bakers from this Upper Peninsula area at Marquette, Mich., in November, two bakers were elected to serve on the board of the Wisconsin association. They are Maurice Nolingberg, Nolingberg Baking Co., Iron River, Mich., and James Randall, Wakefield (Mich.) Bakery.

There are between 35 and 40 bakers in the area and they will have the same privileges as all other members of the Wisconsin association.

—BREAD IS THE STAFF OF LIFE—

MILLFEED FUTURES

The following is a comparison of settling prices for Nov. 30 and Dec. 7 at Kansas City:

SETTLING PRICES

	Nov. 30	Dec. 7
BRAN—		
December	$*40.25	$38.00@ 39.00
January	*41.00	38.50@ 39.25
February	*41.50	38.50@ 39.25
March	*41.50	....@*39.25
April	†39.00	....@ 39.25
May	†38.00	37.50@ 38.50
SHORTS—		
December	*46.50	39.25@ 40.25
January	*46.50	40.00@ 41.25
February	*46.50	40.50@ 42.00
March	*46.50	40.50@ 42.00
April	*46.50	40.50@ 42.00
May	*46.50	40.50@ 42.00
Sales (tons)	240	480

*Asked. †Sale.

The Stock Market Picture

Following are quotations on baking, milling and allied stocks listed on the New York Stock Exchange and the New York Curb market:

	1946 High	1946 Low	Close Nov. 30	Close Dec. 7
Allied Mills, Inc.	39	29½	30¼	31
Archer-Daniels-Midland Co.	40¼	26⅝	36½	38
Burry Biscuit Corp.	12¼	5¼	5½	5⅝
Consolidated Biscuit Co.	25	15¾	18	17½
Continental Baking Co.	22	12⅝	19	21
Continental Baking Co., $5.50 Pfd.	109⅛	101	....	105⅞
Corn Products Refining Co.	70½	58¼	68⅝	72
Cream of Wheat	35¾	28	28⅞	29
General Baking Co.	14¾	10⅛	12	12
General Baking Co., $8 Pfd.	200	170	....	173
General Foods Corp.	56⅛	39⅛	42	44
General Mills, Inc.	54¾	42	47⅛	47½
General Mills, Inc., 5% Pfd.	135½	128	131	130
General Mills, Inc., 3¾% Pfd.	123	114	119	116
Great A. & P. Tea Co.	135	93½	93½	98½
Horn & Hardart Corp. of New York	47⅝	38¼	39	39
Langendorf United Bakeries, "B"	26	10½	....	25
Merck & Co.	77	54	62¼	60½
Merck & Co., $3.50 Pfd.	110¾	100	100	....
National Biscuit Co.	37⅝	25⅛	27⅜	26⅝
Novadel-Agene	40	29⅜	32	30½
Pillsbury Mills, Inc.	35¼	29⅞	32	33
Pillsbury Mills, Inc., Pfd.	110	102½	104¾	104
Purity Bakeries Corp.	38⅝	30	31½	31¾
Quaker Oats Co.	114	90½	96	96
Quaker Oats, $6 Pfd.	180	158	....	160
Ralston Purina Co.	112½	100½	104½	100½
Standard Brands, Inc.	55	34⅝	36¼	37
Sunshine Biscuits, Inc.	56½	42¼	44¼	43¾
United Biscuit of America	57¼	33¼	38	40½
Ward Baking Co., Warrants	9⅛	4¼	6¾	6⅞
Ward Baking Co.	18⅝	11⅞	16½	16⅞
Ward Baking Co., $5.50 Pfd.	107⅞	100	104	104½

	Bid	Asked
National Biscuit Co., $7 Pfd.	180	185
Omar, Inc.	12⅝	13
Standard Brands, Inc., $4.50 Pfd.	98¼	99¾

MARKETS IN DETAIL

U. S. FLOUR MARKETS

THE SOUTHWEST

Kansas City: Lagging domestic sales are largely ignored by millers in view of the heavy demand for export, which was swelled last week by allocations issued to 10 foreign claimant buying agencies, largely European. Export flour bookings were the largest of recent weeks and domestic trade the smallest.

Southwestern mills sold an average of 71% of capacity, compared with 74% in the previous week and 151% a year ago. About two thirds of the sales were for export, and domestic volume was the smallest for almost any week since OPA price squeeze days.

There was still a good demand from Latin American markets, although there is slightly less insistence in buyers' voices now that good bookings have been going on for several weeks. No tendency to back away is found, however, and small, medium and large lots continue to be taken readily by South America. Some offers to buy were in the 100,000-sack class.

European trade had not reached full steam at the week end, since some of the countries getting allotments did not enter the buying field immediately. The British added further to the clears purchased last week, which were charged against their new quotas, while French, Belgian and Norwegian buyers also were active. Altogether, around 1,500,000 sacks of flour must have been bought for export last week.

Domestic buyers remain completely indifferent to the heavy export competition. Sales have dropped off to a very low level, and the majority of buyers appear to have no fear of difficulty in making future commitments. The majority probably expect a price break early in 1947 and are not bullish, and in any event December is normally the worst flour sales month in domestic markets.

Most bakers probably are covered for 60 days and are more concerned about getting shipments on old contracts than in fresh buying. Shipping directions are beyond mills' capacity to handle, what with PMA pressing for deliveries and boat sailing dates to be met on export trade.

Family flour interest remains light generally and mills are not pressing the market. Scattered signs of mild improvement in mixed car trade are evident, but hardly more than a slight symptom.

Spurred by shipping instruction pressure, flour output continues at as high a level as mills can reach with the boxcars available. Last week's output slump over the holiday was offset somewhat with better running time this week, but it is still a daily struggle to maintain output. The car permits now required for export transportation have added to the burden.

With millfeed weak, prices followed wheat market changes only very sluggishly and hardly at all for export. The export price range is wider than ever before, expansion coming on both the top and bottom range.

Quotations Dec. 9, sacked, carlots: hard winter bakery short patent $5.45@5.60, standard patent $5.40@5.45, straight $5.30@5.45, established brands family flour $5.50@6.05, family patents $5.30@5.50, first clear $5.25@5.50, second clear $5.05@5.10, for January-February shipment, on track values somewhat less at $5.10 for first clear and $4.70@4.80 for second.

Seven mills report domestic business active, 6 fair, 4 quiet, 2 slow, 1 dull.

Oklahoma City: Sales last week ranged from 65 to 90% and averaged 78%, compared with 59% the previous week and 60% a year ago. Some individual mills reported 30 to 50% of their sales to export buyers. Of the domestic bookings the family trade took 40% and the bakers 60%. Operations ranged from 40 to 100% and averaged 93%, compared with 83% a week ago and 78% a year ago. Prices closed unchanged to 10c lower. Quotations, delivered Oklahoma points in 100-lb cottons, Dec. 7: carlots, family short patent $5.55@6, standard patent $5.35@5.80; carlots, bakers unenriched short patent $5.70@5.75, standard patent $5.60@5.65, straight grade $5.50@@5.55; truck lots 35c higher on all grades. The decline in prices from the previous week was only in the bakery flours.

Wichita: In the mills operating last week production ranged from 100 to 115%. One large mill is shut down, due to a sympathy strike with affiliated mills in other Kansas cities. Sales averaged 75%. Directions were heavy. Quotations, basis Kansas City, Dec. 6, 100-lb cottons, carlots: family flour $5.70@5.75, bakers short patent $5.45@5.50, clears in jutes, for Gulf shipment $5.45.

Hutchinson: A brisk export demand coupled with threatened curtailment of shipping kept flour millers guessing last week. A considerable volume of new foreign business was closed, mostly in small and medium lots. Domestic inquiry came entirely from bakers, the family trade showing no interest. Bookings were light and mostly for January and February shipment. Shipping directions came freely and only a shortage of cars will prevent full time operations up to Jan. 1. Cars were more plentiful, but mills were forced at times to buy wheat to get a needed car. Prices quoted were off 5@15c sack, not reflecting the full decline in wheat, due to the weak feed position.

Salina: Demand for flour the past week has been only fair with prices about 20c sack lower. Shipping directions are arriving in good volume. Suitable equipment for loading flour is scarce.

Texas: Export inquiry continues active and export business predominates in the volume of sales; domestic demand, both for family and bakers flour, is slow. The export outlet has now practically cleaned up the accumulation of clears. Operations continue at full capacity, and while the boxcar situation is tight, shipments are not being delayed appreciably on that account. Prices are unchanged, except that bakers flour is 5@10c sack lower. Quotations Dec. 7, 100's: family flour, enriched, extra high patent $6.10@6.20; high patent $5.85@5.95; standard bakers, plain $5.75@5.85; clears, plain $5.55@5.60, delivered TCP.

THE NORTHWEST

Minneapolis: Domestic flour bookings continue light, not from lack of inquiry, however, but due to the fact that mills have sold about all they can make for shipment during the next 60 to 90 days. Some bakers would like to contract for more but mills actually do not have it to offer. And mills are getting farther behind on deliveries, with no let-up whatever in volume of shipping directions.

Strength in wheat, combined with weakness in feed and higher prices on bags, have resulted in a 25c bag advance in spring wheat flours over a week ago. Accumulated clears have been disposed of, and prices on top grades are again firm at 15@20c under standard patents.

Flour allocations to European countries announced last week were followed immediately by heavy export orders. Spring wheat mills participated, but not to the same extent as did southwestern. Northwestern companies could have booked a lot more if they had had the flour to offer. England and Holland booked freely for January-February shipment, and Belgium for January-March.

Cuba needs flour, but the government there has not yet decided what subsidy it will pay for the first quarter of 1947. Spring wheat milling companies have reserved some flour for their Cuban customers, but not all that that market will need. Importers there complain that they have not received subsidy payments from the government for the last quarter so, naturally, are concerned as to the future.

Bookings by spring wheat companies last week represented about 72% of total capacity, compared with 62% a week earlier, and 236% a year ago.

Quotations Dec. 9: spring standard patent $5.75, short patent $5.85, high gluten $6.10, established brands of family flour, enriched $6.60, first clear $5.60, second clear $4.65, whole wheat $5.75, all prices in sacks.

Interior mills, including Duluth: Inquiries received from eastern trade resulted in fair business for deferred delivery. Mills report local flour sales light, due to light family buying. Shipping on former bookings is affected by the car situation.

THE CENTRAL WEST

Chicago: There has not been much buying of flour since the removal of the flour production controls. Prices have receded some, and during the past week they declined 10@20c. This, however, has not resulted in an improved demand, and current business is of moderate proportions. A few handlers describe the market as very quiet, and others say only scattered sales of the fill-in type are being made. Buyers, in the main, have their nearby needs pretty well covered, and for the time being are holding off, hoping for still lower prices. Family flour is in quiet demand, and deliveries are also slowing up. Quotations Dec. 7: spring top patent $5.60@5.85, standard patent $5.50@5.69, first clear $5.15@5.55, family flour $6.35@6.40; hard winter short patent $5.45@5.64, 95% patent $5.35@5.54, first clear $5.10@5.34; soft winter short patent $6@6.50, standard patent $5.55@6.30, first clear $4.75@5.30.

St. Louis: Buying of flour has fallen off. Bakers have sufficient on the books to carry them for the next 30 days or so. Family trade is indifferent, as it is finding demand rather slow and is anticipating lower levels. Specifications for shipment are heavy, but mills are having difficulty in securing empties to satisfy the demand. A persistent inquiry for export continues. High-protein clears are in good demand for export and domestic trade at around straight prices. Low protein clears are selling about 20c less. Jobbers say bakers are slow in showing any interest in making new commitments. They are satisfied to go along with what they have on the books.

Purchases made consist of nearby and immediate wants. Buyers are looking for lower prices in the very near future. Mills are offering more freely, but are having difficulties in getting cars, with the result jobbers are finding their stocks running low. Prices are unchanged.

Central states mills report bakers are not showing much interest in purchasing. They are more interested in getting delivery of what they have on their books. Family trade shows some improvement, although it is still rather light. Cars for flour loading are still scarce.

Quotations Dec. 7, in 100-lb cottons: hard winter wheat bakery standard patent $5.45, short patent $5.60, family patent $6.20, high protein clears $5.10, low protein $4.70; soft winter wheat bakery cake $6.25, short patent $5.55, family patent $6.40, straight $5.70, clears $5.30; spring wheat short patent $5.85, standard patent $5.80, straight $5.75, high protein clears $5.50, low protein $5.40.

Toledo: There is continued and increasing weakness in millfeed with bran selling as low as $43 ton and flour middlings $44, sacks, f.o.b. Toledo, last week. Apparently quotations are headed still lower. The car shortage has caused some reduction in output now and then, there is a constant struggle to get cars. There appears to be no urgency for flour in domestic markets and millers not pressing for business. Everybody seems to be holding off for more settled conditions and for clearer indication of what may happen as a result of the release of the business from hampering government regulations and controls. Bids have been working up a little for wheat at Toledo, but no matter what is bid the wheat isn't coming out.

Cleveland: Jobbers are not interested in buying flour at present. The recent break in the wheat market failed to stimulate any interest. Bakers, both large and small, are only concerned about baking Christmas production. The buying of flour is the least of their concern. Family flour is not selling at all. Grocers' stocks are ample. All national brands of flour are now obtainable. Conditions in general show buyers' resistance, which will be maintained until after the first of the year.

Quotations Dec. 7: spring family $6.06, high gluten $6.05, standard patent $5.60, first clear $5.40; hard winter family $6, high gluten $5.90, standard patent $5.30, first clear $5.10; soft winter family $6, short patent $6.10, straight $5.50, first clear $5.

EASTERN STATES

Buffalo: The flour trade is well booked ahead and anxious for deliveries against contracts. Shipments are delayed because of boxcar scarcity. As a result, very few new orders are being taken now. Spring family, spring standard and soft winter straight advanced 10c sack, and hard winter high gluten 20c, while spring high gluten went down 20c, spring first clear 15c, hard winter family 10c, hard winter standard 11c, and soft winter short patent 5c. Others were unchanged.

Quotations Dec. 7, cottons, f.o.b. Buffalo: spring family $6.62, high gluten $6.20, standard $5.80, first clear $5.50; hard winter family $6.62, high gluten $6.20, standard $5.80, first clear $5.30; soft winter family $6.50, short patent $5.95, straight $5.60, first clear $4.95.

New York: Domestic flour business is moderate. Buyers are extremely anxious to buy spot or nearby flour, which is practically impossible, but on the 120-day basis they are cagey about purchasing at current levels, just as mills are not eager to sell in view of the many possible future hazards. Furthermore, nearly all mills are behind in shipments due to boxcar shortages, making jobbers reluctant to make new purchases while cheap flour is still owing them.

Jobbers also feeling repercussions from diminishing baked goods sales. Strong consumer resistance to higher sweet goods prices is felt in retail channels and the volume of business in November was off considerably from October and September. The two earlier months were, however, unusually good, as the buyers' strike against meat, the lack of deliveries of many foodstuffs because of the trucking strike, and the closing of some chain stores threw heavy additional business to the retail baker. The success of the consumer movement against meat has given impetus to resistance to advances in cakes, pies and other luxury items.

Export volume continues heavy, but in the local market each inquiry travels through many channels and grows as it goes into large figures. Allocations for 1947 gave an additional stimulus to this buying.

Flour prices are about 10c lower than the previous week in line with reductions in wheat levels.

Quotations Dec. 7: spring family $6.60@6.70, high gluten $6.30@6.40, standard patents $5.85@6, clear $5.75@5.85; southwestern $5.80@5.95, standard $5.75@5.90, clear $5.50@5.65; soft winter straight $5.60@5.90.

Boston: Flour trading is extremely light in the Boston market. Prices average 15 to 39c lower than a week ago, but even at the new levels buying is extremely slow. Most buyers feel that current prices do not reflect the decline in wheat sufficiently to attract new commitments. The inventory position in most cases is strong with most operators stating that their supplies are ample for periods extending from 30 to 60 days. Slightly heavier mill offerings due to the lifting of the quota restriction only tended to intensify buyers' resistance. The boxcar shortage, while watched with apprehension, seems to concern only dealers active in export business. Bakery operations continue on a light scale with purchases restricted to immediate needs. Dealers report that the consumer trade is still showing resistance to higher prices in their goods, which, if it continues, will decidedly curtail their operations.

Quotations Dec. 7: spring family $6.60@6.70, short patents $5.90@6.10, standard

SUMMARY OF FLOUR QUOTATIONS

Week-end flour quotations, per sack (100 lbs). (Canadian quotations per bbl of 196 lbs.) All quotations on basis of carload lots, prompt delivery.

	Chicago	Mpls.	Kans. City	St. Louis	Buffalo
Spring family	$6.35@6.40	$...@6.60	$...@ ...	$...@ ...	$...@6.62
Spring high gluten	5.60@5.85	...@6.10	...@ ...	...@5.85	...@6.20
Spring standard	5.50@5.69	...@5.75	...@ ...	...@5.80	...@5.80
Spring first clear	5.15@5.55	...@5.60	...@ ...	...@5.50	...@5.50
Hard winter family	...@ ...	...@ ...	5.50@6.05	...@6.20	...@6.62
Hard winter high gluten	5.45@5.64	...@ ...	5.45@5.60	...@5.60	...@6.20
Hard winter standard	5.35@5.54	...@ ...	5.40@5.45	...@5.45	...@5.80
Hard winter first clear	5.10@5.34	...@ ...	5.25@5.50	...@5.10	...@5.30
Soft winter family	...@ ...	...@ ...	...@ ...	...@6.40	...@6.50
Soft winter short patent	6.00@6.50	...@ ...	5.65@6.10	...@5.55	...@5.95
Soft winter straight	5.55@6.30	...@ ...	5.50@5.65	...@5.70	...@5.60
Soft winter first clear	4.75@5.30	...@ ...	...@ ...	...@5.30	...@4.95
Rye flour, white	7.44@7.65	7.60@7.70	...@ ...	...@7.65	...@7.80
Rye flour, dark	6.04@6.54	7.00@7.10	...@ ...	...@5.95	...@7.00
Durum, gran., bulk	5.49@5.59	5.35@5.45	...@ ...	...@5.70	...@5.73

	New York	Phila.	Boston	Cleveland	Atlanta
Spring family	$6.60@6.70	$7.80@8.00	$6.60@6.70	$...@6.06	$...@ ...
Spring high gluten	6.30@6.40	6.05@6.15	6.25@6.40	...@6.05	6.75@6.90
Spring standard	5.85@6.00	5.95@6.05	5.80@6.00	...@5.60	6.15@6.40
Spring first clear	5.75@5.85	5.60@5.80	5.65@5.75	...@5.40	6.10@6.25
Hard winter high gluten	5.80@5.95	...@ ...	...@ ...	...@5.90	...@ ...
Hard winter standard	5.75@5.90	...@ ...	...@ ...	...@5.30	5.80@6.05
Hard winter first clear	5.50@5.65	...@ ...	...@ ...	...@5.10	5.06@5.31
Soft winter family	...@ ...	...@ ...	...@ ...	...@6.00	6.20@6.75
Soft winter short patent	...@ ...	5.85@5.90	...@ ...	...@6.10	5.85@6.45
Soft winter standard	5.60@5.90	5.50@5.85	5.70@5.85	...@5.50	5.48@5.69
Soft winter first clear	...@ ...	...@ ...	...@ ...	...@5.00	5.10@5.35
Rye flour, white	7.65@7.75	7.80@8.00	...@ ...	7.60@8.00	7.40@7.60
Rye flour, dark	...@ ...	...@ ...	...@ ...	...@ ...	...@ ...
Durum, gran., bulk	...@5.79	...@ ...	5.79@5.89	...@ ...	...@ ...

	Seattle	S. Francisco		Toronto	**Winnipeg
Family patent	$...@ ...	$...@ ...	Spring top patent¶	$...@5.05	$...@5.30
Soft winter straight	...@ ...	...@ ...	Spring second patent¶	...@4.40	...@4.80
Bakery grades	...@ ...	...@ ...	Spring first clear¶	...@3.30	...@ ...
Pastry	...@ ...	...@ ...	Spring exports§	...@11.63	...@ ...
			Ontario soft winters‡	...@5.50	...@ ...
			Ontario exports§	...@6.55	...@ ...

**In cottons, Fort William basis. ‡Secondhand cottons. ¶98-lb cottons. §280-lb cottons.

SUMMARY OF MILLFEED QUOTATIONS

Week-end millfeed quotations, summarized from the market reviews, are based on carload lots, prompt delivery, per ton, packed in 100-lb sacks, f.o.b. at indicated points:

	Chicago	Minneapolis	Kansas City	St. Louis	Ft. Worth
Spring bran	$40.00@44.00	$40.50@41.00	$...@	$...@	$...@ ....
Hard winter bran	...@	...@	38.50@39.25	...@	...@ ....
Soft winter bran	...@	...@	...@	...@41.00	41.00@42.00
Stand. middlings*	42.00@45.00	41.50@42.00	...@	...@	...@ ....
Flour middlings†	...@	43.50@44.00	40.00@40.50	44.50@45.50	46.00@47.00
Red dog	...@	...@47.00	...@	...@	...@ ....

	Buffalo	Philadelphia	Boston	Cleveland	Atlanta
Spring bran	$46.00@46.50	$49.00@50.00	$...@48.50	$...@47.00	$...@ ....
Hard winter bran	46.00@46.50	49.00@50.00	...@	...@47.00	...@ ....
Soft winter bran	46.00@46.50	49.00@50.00	...@	...@47.00	48.50@50.00
Stand. middlings*	47.00@47.50	...@51.00	...@49.00	...@49.00	...@ ....
Flour middlings†	51.00@51.50	...@	...@	...@51.00	51.00@52.00
Red dog	54.00@55.00	...@56.00	...@	...@	...@ ....

	Spring bran	Shorts	Middlings
Toronto	$ ....@29.00	$ ....@30.00	$ ....@33.00
¶Winnipeg	....@28.00	....@29.00	....@ ....

*Brown shorts. †Gray shorts. ¶Fort William basis.

patents $5.80@6; high gluten $6.25@6.40, clears $5.65@5.75, hard winter short patents $5.80@5.95; soft winter flour $5.70@5.85, high ratio $6.60@6.80.

Philadelphia: The principal development in the local flour market has been an increased demand for export as a result of the recent announcement of first quarter quotas.

There is little change in the domestic situation, which finds most mills sold ahead for varying and rather lengthy periods, and buying interest on the whole is dampened by the prevailing level of prices.

Quotations have undergone some downward revision as a result of the recent dip in cash wheat, but in many instances the amount of decline was subsequently reduced.

Observers express the opinion that the rather sharp reaction in millfeeds, with its resulting smaller return on both bran and middlings, served as a cushion for flour.

At any rate, quotations on the whole are only 5 to 10c under those of a week ago, except soft winter standard which is selling at a modest advance.

The boxcar situation is still a source of worry to the trade here, although the situation has been made a trifle brighter by the sudden John L. Lewis edict which orders bituminous coal miners back to work.

It has been generally felt that while flour shipments were exempt from the cutbacks in rail freight movement, the disruption in carrier schedules because of the reduction in the number of steam trains might inflict some delays along the line.

Family flour remains plentiful on retail shelves, but wholesale grocers report the boxcar shortage has caused their stocks to dwindle, making them hope for some relief within the next few days, before housewives want increased amounts to start their Christmas baking.

Quotations Dec. 7: soft winter standard $5.50@5.85, straight $5.75@5.85, short patent $5.85@5.90, spring first clear $5.60@5.80, standard patent $5.95@6.05, short patent $6.05@6.15, family flour $7.80@8.

Pittsburgh: Effects of the coal strike are evident in the entire Tri-State district. Capacity bakings are still made to the limit of fat and sugar supplies, but the sell-out of these goods just prior to the strike end was not as fast as formerly. Fruit cake sales for the holidays are at a record. Flour sales continue slow. Bakers show little interest as both large and small bakers have ample stocks of flour to carry them through February. Jobbers are not inclined to add to their stocks at present prices. Flour prices are about the same as a week ago. Both bakers and jobbers think flour is too high priced to warrant placing orders now. Mills are not pressing for sales. The boxcar situation continues to be serious. All in all, bakers are not in a happy mood with their overhead costs increased by labor and material costs, and the great uncertainties they confront on all sides.

Quotations Dec. 7, cottons: hard winter $5.40@5.75, medium patent $5.45@5.80, short patent $5.50@5.85; spring wheat $5.70@6, medium patent $5.75@6.10, short patent $5.80@6.20; high gluten $6.10@6.30, first clear $5.60@5.69; family flour, advertised brands $6.20@6.49; other brands $5.90@6.17; cake and pastry flour $5.50@6.50.

THE SOUTH

Atlanta: Pre-holiday dullness is apparent in flour business in this area with all sides of the trade showing a lack of buying interest. Bookings are ample and buyers are apparently waiting for lower prices before making further commitments. Shipping directions are also quieter even in face of the continued boxcar shortage. All holes have about been filled and buyers do not want to have heavy stocks on which to pay floor taxes. Bakers are encouraged by lower prices on lard and are hopeful that prices on other ingredients will take a tumble. Blenders report their out-go as slower. Calls for the higher grades of family flour continue with practically no interest in lower grades. Some soft wheat cut-off sold for $5.35 in 10½ oz jutes, f.o.b. New Orleans for export.

Flour prices moved downward, spring wheat flours being off 15c and southwestern off 5@10c. Some family flour prices also showed a 5@10c decline. White rye flour was off 20c, but cake and pastry flours held about steady.

Quotations Dec. 7: spring high gluten $6.75@6.90, standard $6.15@6.40, first clear $6.10@6.25; hard winter standard $5.80@6.05, first clear $5.06@5.31, family $6@6.75; soft wheat family $6.20@6.75; short patent $5.60@6.20, bulk, or $5.85@6.45 in 100's, straights $5.22@5.43, bulk, or $5.48@5.69 in 100's; hard wheat short patent $5.60, bulk, or $5.85 in 100's; soft wheat first clear $5.10@5.35; cake flour, extra fancy $6.60@6.70, pastry flour $5.70@5.80; rye flour, white $7.40@7.60. Self-rising family flour is quoted 25c over plain.

PACIFIC COAST

Portland: Mills are operating to capacity at terminals, but some of the interior mills are on short time, due to their inability to obtain boxcars to move flour out of their limited storage. Export mills are pressing the government to open the Chinese field, so they may be able to re-establish their brands in that market, as they are now doing in the South American and Philippine Islands. They are able to work any amount of export business in the open territory, but still are forced to go through PMA to China. Demand is strong from all export quarters, and domestic buyers are also asking for flour. Mills are endeavoring to rebuild prewar business and are not keen on being kept out of China. Flour prices are holding steady at around $5 for export straights, f.o.b. mill. Other quotations are steady.

Quotations Dec. 7: all Montana $6.12, bluestem bakers $5.88, cake $6.55, pastry $5.20, whole wheat 100% $5.47, graham $5.25, cracked wheat $5.25.

CANADIAN MARKETS

Toronto-Montreal: Canadian flour mills are operating at capacity and are fully booked up to the end of the calendar year. Business with countries other than the United Kingdom for the beginning of 1947 is not yet permitted. United Kingdom orders may be accepted for shipment up to the end of March and substantial sales for that account have been made for those months. It appears that Greece is the country now most urgently in need of flour, although many other markets are also being supplied. The heavy export demand is cutting down offerings in the domestic market and while there is no actual shortage more could be sold if available for that purpose. Domestic prices are at ceiling levels and the export price of government regulation flour for Britain is also stabilized. Quotations Dec. 7: top patent springs for use in Canada $5.05 bbl, seconds $4.40, bakers $4.30, in cotton 98's, mixed cars, with 10c added for cartage where used; for export, government regulation flour $11.63 per 280 lbs, December shipment, $11.88 January-February-March, Halifax-St. John.

Offerings of winter wheat flour are far from adequate for requirements of domestic buyers. Scarcity of wheat has reduced production. Some flour has been exported on permits recently issued by the Wheat Board but the quantity was limited. Ceilings are in effect. Quotations Dec. 7: standard grades $5.50 bbl, second-hand cottons, Montreal freight basis; for export $6.55 bbl, f.a.s., cotton 98's, Canadian seaboard, plus equalization fee of $5.15.

Deliveries of winter wheat have practically ceased. Any grain remaining in farmers' hands will mostly be used for feeding purposes. The quantity is not great. Quotations Dec. 7: $1.12@1.14 bu, shipping points in Ontario, the equivalent of the ceiling.

Vancouver: Export flour business on private account continues only fair here, mainly because of the limited amount available from western mills. The monthly allotment for shipment to such areas as China is quickly taken up and nothing more is available. There is, however, a growing demand for ports around the Far East and steamship space is reported good. Steady but limited shipments are going to Manila but exporters are confining sales to regular customers and not taking on any new accounts.

In the domestic flour trade demand is holding steady with supplies reported fair. Principal demand continues to come from the large bakers engaged in the bread trade. Stores are only finding a limited outlet and small bakers in the cake and pie trade are slowed up by the sugar and shortening scarcity.

Hard wheat flour prices as of Dec. 7 for cotton 98's on a cash car basis: first patents $5.40, bakers patents $5, vitamin B $4.90.

Supplies of cake and pastry flour from Ontario continue light with the price to the trade unchanged at $7.50.

Winnipeg: Export business in Canadian flour last week barely topped the 500,000-bu mark. A very minor amount was sold to the United Kingdom, while the remainder went chiefly to China, the Philippines, South American countries, British West Africa, Italy and the West Indies. Domestic trade continues keen and supplies are moving freely, with mills operating to capacity. Quotations Dec. 7: top patent springs for delivery between Fort William and the British Columbia boundary $5.30, cottons; second patents $4.80, second patents to bakers $4.60.

MILLFEED MARKETS

Minneapolis: A better feeling is noticeable at current lower levels. Early last week, one or two eastern mixers bought fair-sized lots of bran and toward the close of the period a nice inquiry was developing for middlings. The latter had been neglected for some time and had declined to practically bran basis. The wide spread between bran and red dog has been narrowed to more normal limits, and, while more interest is being shown, really free trading is not looked for until consumption catches up with production again. Production in the Northwest and Southwest has been well above normal and prices were higher than feeders were willing to pay, with the result that flour mills and feed mixers were caught with embarrassing surpluses. Millfeed prices have tumbled $15@20 ton from the high points touched after ceilings were removed in October. At current levels, they are still above the 1945 ceiling of $37.75, but, apparently, are more in line with buyers' ideas of values. The holiday season is approaching, when buying is usually the lightest of the entire heavy feeding season. Quotations: bran $40.50@41, standard middlings $41.50@42, flour middlings $43.50@44, red dog $47.

Kansas City: Some scattered improvement in demand for bran left the market fairly steady at $38.50@39 Dec. 7. Although there was considerable clean-up of feed on track, receipts were still high and production continues at top pace. Shorts were slightly weaker at $39.50@40. The spread between bran and shorts—$1—was at the narrowest point experienced for some time. Whether the bran recovery is only temporary remains to be seen, as many buyers are loaded with future deliveries at higher prices and currently some jobbers and brokers report no purchases and no sales.

Oklahoma City: There has been a $2 decline in bran, $5.50 in mill run and $8.50 in shorts. Quotations, straight cars: bran $2@2.05, mill run $2.03@2.08, shorts $2.07½@2.12½. Mixed or pool cars 5c additional.

Wichita: Millfeed prices continue to decline. Demand is light. Supplies are ample. Quotations, basis Kansas City: bran $38.40@39.40, shorts $40@41.

Salina: The demand for millfeed is extremely sluggish with prices sharply lower. Supplies are abundant. Quotations, basis Kansas City: bran $38@38.50, gray shorts $40@40.50.

Hutchinson: The millfeed market is a jaundiced affair with buyers showing no interest at sharply lower prices. Most mixers have plenty of high priced feed bought and indicate unwillingness to commit themselves further until the market is stabilized. Quotations, Kansas City basis: bran $38.50, mill run $39.50, gray shorts $40.50.

Fort Worth: Demand seems slightly better on the price decline and about sufficient to absorb the offerings, and there is little or no accumulation of unsold production. Quotations: wheat bran $41@42, gray shorts $46@47, burlaps, delivered TCP, carlots.

Toledo: Market is very weak; sales are slow and demand has dried up. Millfeed was quoted last week as low as $43 ton for bran and $44 for flour middlings, in sacks, f.o.b. Toledo. This represents the low point so far after declines last week.

Cleveland: There has been a slight demand for millfeed from truckers. Car buyers are not interested except at a discount of $2@3 ton. Quotations: bran $47, standard middlings $49, flour middlings $51.

Buffalo: The trade is restricting its millfeed buying to nearby needs. This lack of buying interest together with a heavy output has resulted in a sharp price decline in past weeks. Bran is $4@4.50 ton lower; standard middlings is $6.50 lower. Flour middlings is off $9, with red dog $11.50@12. Quotations, f.o.b. Buffalo, jutes: bran $46@46.50, standard middlings $47@47.50, flour middlings $51@51.50, red dog $54@55.

Boston: The Boston millfeed market is weak. Offerings are extremely heavy resulting in declines of $5@7 ton. Persistent offerings only tended to develop further buying resistance. The few trades consummated were for spot delivery. The huge supplies of feed grains are causing feeders and formula feed manufacturers to center their interest in these and turn away the higher priced grain by-product feeds and oilseed meals. Quotations Dec. 7: bran $48.50, middlings $49.

Philadelphia: Millfeed prices are displaying a heavy undertone in this market, but to date there has been no rush to buy at the lower levels. Consumers seem to have adopted the attitude that quotations have fallen this far and might decline further. Meanwhile, stocks on hand are apparently adequate for present needs and the number of offerings makes it seem to them as if delivery will be an easy matter when they do decide or are forced to make purchases. Quotations, Dec. 7: bran $49@50, standard middlings $51, red dog $56.

Pittsburgh: Jobbers are very cautious in buying millfeeds. Millfeed prices took another tumble the past week, with this factor serving as a further note of caution to jobbers. Sale of every type of millfeed the past week was down to a new low. Bran $47.85 ton, f.o.b. Pittsburgh; standard middlings $48.85 ton; flour middlings $54.80 ton.

Atlanta: Demand fair; supply plentiful; wheat bran $48.50@50, gray shorts $51@52; bran was reported selling as low as $46 and gray shorts around $49.25@50.25.

Portland: Mill run, bran, shorts $50; middings $52; Kansas bran $50.

Ogden: Millfeed prices have declined, with demand and supply about equal and bookings extending to March. Plants are operating to capacity seven days per week. Quotations: red bran and mill run $52, middlings $56, carlots, f.o.b. Ogden. Denver prices: red bran and mill run $57, middlings $61. California prices: red bran and mill run $57.50, middlings $61.50, carlots, f.o.b. San Francisco. Los Angeles prices: $57.75 and $61.75, respectively.

Toronto-Montreal: Demand is heavy. Production is at record levels but is inadequate. Millfeed is cheap at ceiling prices. Quotations Dec. 7: bran $29, shorts $30, middlings $33 ton, net cash terms, bags included, mixed or straight cars, Montreal basis.

Winnipeg: Demand for all types of millfeed continues keen, with practically all stocks from western mills being shipped to eastern Canada. The usual moderate amounts continue to move from Alberta to British Columbia. Quotations, Manitoba and Saskatchewan bran $28, shorts $29; Alberta bran $25.50, shorts $26.50; small lots ex-country elevators and warehouses $3 extra.

Vancouver: Domestic demand continues to improve and dealers, while getting good supplies from western mills, are unable to maintain any stocks. Poultry and cattle raisers account for a large part of the demand. Prices on a cash car basis are unchanged: bran $29.80, shorts $30.80, middlings $33.80.

GRAIN FUTURES—CLOSING PRICES

Closing prices of grain futures at leading markets, in cents per bushel:

WHEAT

	Minneapolis		Chicago		Kansas City		Seattle		Duluth	
	Dec.	May	Jan.	Mar.	Dec.	Mar.	Dec.	May	Dec.	May
Dec. 3	201	187½	203¾	197⅞	199⅝	192¼	....	....	200	....
Dec. 4	201	187⅝	203¾	196¾	199⅝	192¼	....	....	200	....
Dec. 5	201½	188¼	206	199¼	198¾	191¼	....	....	200	....
Dec. 6	202	188¾	206¾	201½	198¾	193	....	....	200	....
Dec. 7	204	189⅞	209	200¾	201½	194¾	....	....	200	....
Dec. 9	209⅝	191½	209½	202¼	201½	....	....	....	200	....

	CORN						OATS			
	Minneapolis		Chicago		Kansas City		Chicago		Minneapolis	
	Dec.	May	Jan.	Mar.	Dec.	May	Dec.	Mar.	Dec.	May
Dec. 3	....	....	130¼	129¼	....	....	80⅝	71	75⅝	64½
Dec. 4	....	....	131⅝	129¼	....	....	81½	71½	75⅞	64⅜
Dec. 5	....	....	132⅝	129⅝	....	....	81⅝	72¼	75⅞	64⅝
Dec. 6	....	....	133¾	130⅝	....	....	81⅝	73	76¼	65
Dec. 7	....	....	131⅛	128½	....	....	80⅛	72⅞	74⅝	64⅝
Dec. 9	....	....	132¼	130¼	....	....	81⅝	73¾	75⅞	65¼

UNITED STATES VISIBLE GRAIN SUPPLY

Visible supply of grain in the United States, as compiled by the secretary of the Chicago Board of Trade, in bushels (000's omitted) on Nov. 30, and corresponding date of a year ago:

	Wheat		Corn		Oats		Rye		Barley	
	1946	1945	1946	1945	1946	1945	1946	1945	1946	1945
Baltimore	1,517	5,149	777	82	825	87	69	365	4	4
Boston	323	954	..	..	..	..	..	358	..	..
Buffalo	6,417	6,280	1,078	49	4,424	7,482	165	140	1,319	863
Afloat	4,847	6,339	647	303	168	2,074	..	..	260	82
Chicago	1,205	2,923	3,810	1,735	2,040	5,742	397	2,049	685	1,232
Afloat	..	..	..	..	..	..	..	..	..	..
Duluth	12,345	9,216	4	87	745	2,490	5	72	3,628	3,853
Fort Worth	5,594	6,044	136	83	174	519	2	5	14	77
Galveston	1,876	1,886	..	..	..	..	..	..	..	..
Hutchinson	6,853	9,889	..	..	..	..	..	..	122	557
Indianapolis	1,253	1,772	1,128	489	233	417	120	6	..	13
Kansas City	10,332	27,013	838	569	312	1,426	66	158	458	165
Milwaukee	314	257	276	14	163	41	..	..	4,640	3,942
Minneapolis	1,095	1,973	303	130	1,049	13,703	695	1,134	9,322	7,158
New Orleans	611	227	563	24	85	63	..	31	1	..
New York	319	574	7	36	180	654	1	1	6	..
Omaha	5,670	9,233	942	1,826	151	2,975	98	220	485	418
Peoria	..	..	529	205	5	..	..	..	48	..
Philadelphia	1,228	1,876	318	52	366	56	31	85	..	..
Sioux City	19	33	62	746	38	537	2	4	370	..
St. Joseph	1,298	3,022	603	296	782	1,324	..	2	13	88
St. Louis	2,559	3,817	1,522	497	388	1,819	3	13	17	21
Wichita	3,290	5,798	1	1	30	33	..	..	1	53
Lakes	656	1,216	1,037	..	..	..	..	..	..	..
Totals	69,621	105,491	14,581	7,224	12,158	41,442	1,654	4,643	21,393	18,526

OATMEAL MARKETS

Toronto-Montreal: Rolled oats and oatmeal are in good demand. Domestic sales are at the peak at this season of the year and there has been a fair export business. Ceiling prices prevail. Quotations Dec. 7: rolled oats $3.15 bag, in 80-lb cottons; oatmeal, in 98-lb jutes $3.85, f.o.b. Toronto or Montreal.

Winnipeg: There is an improvement in the demand for rolled oats and oatmeal, with sales showing some increase as a result of colder weather. Supplies are moderate but sufficient to take care of buying orders. Quotations Dec. 7: rolled oats in 80-lb sacks, $3.25 in the three prairie provinces; oatmeal in 98-lb sacks, 20% over rolled oats.

Minneapolis: Bulk rolled oats were quoted at $6 on Dec. 9; 20-oz packages $2.65 case, 48-oz packages $2.89.

WANT ADS

Advertisements in this department are 5c per word; minimum charge, $1. (Count six words for signature.) Situation Wanted advertisements will be accepted for 2½c per word, 50c minimum. Display Want Ads $4 per inch per insertion. All Want Ads cash with order.

HELP WANTED

WANTED—MILLER FOR 200-BBL MILL. Raton Flour Mills Co., Raton, N. M.

EXPERIENCED FLOUR MILLER WANTED for new medium size mill nearing completion. State full particulars, in strict confidence. Reply Post Office Box 3007, Winnipeg, Man.

WANTED — EXPERIENCED SCIENTIFICALLY educated assistant superintendent for large soya bean oil mill. Salary $4,500 per year to begin with; steady increases to be made if services warrant. Candidate must be of good character, energetic and well trained in expeller operations. Wire application and confirm by special delivery letter. Address 8288, The Northwestern Miller, 23-25 Beaver Street, New York 4, N. Y.

ASSISTANT SUPERINTENDENT BY large Minnesota mill grinding spring wheat and rye. Must be competent to supervise milling program and successfully handle personnel under him. Should be less than 45 years of age, and some technical training would be an asset. Steady position with good salary to right man. Give complete details regarding yourself in first letter. Address 8199, The Northwestern Miller, Minneapolis 2, Minn.

SITUATIONS WANTED

SALES REPRESENTATIVE TO COVER Maryland, District of Columbia and Virginia. Successful flour sales record to bakers in this area since '38. Address 8312, The Northwestern Miller, Minneapolis 2, Minn.

KANSAS STATE GRADUATE MILLING technology with 14 years' experience operating and supervising mills using hard and soft wheats; also, cereal and feed mill operations, wants superintendent's job working toward increased responsibilities and part ownership. Now employed. References. Address 8289, The Northwestern Miller, Minneapolis 2, Minn.

EQUIPMENT FOR SALE

FOR SALE — FOUR 16' FISH ROTARY Ovens, in good condition. Complete with oil burners, exhaust fans, and vents. Now in use. To be dismantled and moved by buyer. $500 each. Purity Baking Co., St. Paul, Minn., GA 3891, Mr. Whalen.

WANTED—ALL GRADES FLOUR
Old line (30 years) exporters desire new connections, mills (no brokers) having no direct export sales foreign markets. Past sales world widely known private brands 150,000 bbls yearly. Ready place orders, prompt deliveries. Address 8277, The Northwestern Miller, 23 Beaver St., New York 4, N. Y.

MACHINERY FOR SALE

FAIRBANKS-MORSE ENGINES FOR SALE
One 60 H.P., Type VA; one 20 H.P., Type Y. Randolph Milling Co., Bandana, Ky.

MACHINERY WANTED

WANTED—BRIGHTWOOD BOX MACHINE —Pneumatic scale packaging machine; two flour blenders. Address 4970, The Northwestern Miller, Minneapolis 2, Minn.

WANTED TO BUY — RICHARDSON scales, bag closing machines and other good mill, feed and elevator equipment. J. E. Hagan, 1522 E. High, Jefferson City, Mo.

WANTED—CAN UTILIZE 5 TO 10 ANderson Oil Expellers. Give details, serial numbers, motor size and price. Address 7897, The Northwestern Miller, Minneapolis 2, Minn.

10,000 tons
HIGH PROTEIN
Wheat Flour Wanted
FOR EXPORT
DECEMBER-JANUARY-FEBRUARY DELIVERY
DI SANTO & Co.
CHRISTIE BLDG.
DULUTH 2, MINN.

OPPORTUNITY!
We are a reputable principal
READY to PAY YOU CASH
For quick purchase on INDUSTRIAL PLANTS—MFG. DIVS. or UNITS (assets or capital stock)
For immediate action in the strictest confidence address:
Box No. 1203 147 W. 42nd St.
NEW YORK 18, N. Y.
Personnel will be retained wherever possible.

MILL EXECUTIVES
Your competitor has cut out all hand trucking. He uses daylight packing on flour and millfeed. He has remodeled his mill and his processes for efficiency.
Our Engineers did it for him!
We also plan feed mills and soybean expeller plants.
ARTHUR L. CHANDLER & CO.
Management Engineers
Cotton Belt Bldg. ST. LOUIS 2, MO.

Western Canada Visible Grain Supply

Visible supply of grain in the western inspection division as reported by the Board of Grain Commissioners for Canada, Fort William, Ont., Dec. 6, 1946 (000's omitted):

	Wheat	Durum	Oats	Barley
Fort William and Port Arthur ..	9,415	846	5,799	1,204
Vancouver-New Westminster ..	9,052	...	1,442	198
Churchill	43	..	..	..
Int. public and semi-public elevators	285	..	444	1,899
Totals	18,795	846	7,684	3,301
Year ago	25,706	993	6,491	10,535
Receipts during week ending Dec. 6:				
Ft. Wm.-Pt. Ar..	3,578	167	875	658
Pacific seaboard.	1,488	..	237	7
Other terminals*	80	..	47	14
Totals	5,145	167	1,159	679
Shipments during week ending Dec. 6:				
Ft. Wm.-Pt. Arthur—				
Lake	11,761	617	1,191	2,548
Rail	62	..	133	30
Pacific seaboard.	907	..	80	19
Other terminals*	11	..	5	41
Totals	12,741	617	1,408	2,639
Total receipts for the crop year Aug. 1-Dec. 6, 1946:				
Ft. Wm.-Pt. Ar..	95,204	4,654	30,961	21,075
Pacific seaboard.	21,127	..	1,720	367
Churchill	1,094	..	1	..
Other terminals*	592	..	195	1,819
Total shipments for the crop year Aug. 1-Dec. 6, 1946:				
Ft. Wm.-Pt. Ar..	88,312	4,352	29,640	21,974
Pacific seaboard.	13,649	..	1,011	234
Churchill	2,929	..	1	..
Other terminals*	338	..	604	434

*All other terminals and semi-public terminals, western division.

United States Grain Stocks

Commercial stocks of grain in store and afloat at the principal markets of the United States at the close of the week ending Nov. 30, 1946, and Dec. 1, 1945, as reported to the Grain Branch of the Production and Marketing Administration of the United States Department of Agriculture in bus (000's omitted):

	American		Canadian in bond	
	Nov. 30, 1946	Dec. 1, 1945	Nov. 30, 1946	Dec. 1, 1945
Wheat	85,280	121,712	5,226	25,218
Corn	14,759	7,780	...	...
Oats	14,187	45,043	1,086	4,782
Rye	2,144	4,769	1,221	363
Barley	24,509	22,707	1,061	697
Flaxseed	5,323	8,386	...	124
Soybeans	23,876	25,049	...	...

Stocks of United States bonded grain in store and afloat in Canada markets Nov. 30 (figures for corresponding date a year ago given in parentheses): wheat, none (6,000) bus; corn, 121,000 (1,000); soybeans, none (91,000).

RYE PRODUCTS

Minneapolis: Market is very quiet. Even mixed-car orders are hard to get. But rye grain prices hold high notwithstanding and, with feed cheaper and bags higher, the possibility of lower flour prices seems remote. Pure white rye flour $7.60@7.70 sacked, in cottons, f.o.b. Minneapolis; pure medium $7.40@7.50; pure dark $7@7.10.

Buffalo: Fluctuating prices for rye resulted in a downward trend which lost a large portion of the gain made a week ago, although the demand still is good with the supply about normal. White and medium are down 45c sack, while dark is off 50c, from the previous week's close. Quotations, cottons, f.o.b. Buffalo: white $7.80, medium $7.60, dark $7.

New York: Rye flour prices are lower, following declines in grain levels, with light volume of trading. Pure white patents $7.65@7.75.

Philadelphia: A downward readjustment in the cash market pulled rye flour below the new high it reached recently, but the latest quotation on white was only 15@20c below the asking price of a week ago and bakers found it equally unattractive, with the result that activity continued at a low ebb. There have been reports that some smaller bakeries are reaching the point where stocks soon will be depleted. Quotations Dec. 7: rye white flour $7.80@8.

Chicago: Although rye flour prices have declined some, they are still considered too high by buyers and this is retarding business. Only scattered small sales are being made. Directions are only fair. White patent rye $7.44@7.65, medium $7.29@7.39, dark $6.04@6.54.

St. Louis: Prices unchanged. Sales and shipping instructions are slow. Pure white $7.65, medium $7.40, special medium $7.15, dark $5.95, rye meal $6.05.

Cleveland: There is positively no interest in rye flour at present prices, although rye grain declined this week. Quotations Dec. 7: patent white rye flour $7.60@8, medium rye flour $7.50@7.80.

Portland: Pure dark rye $6.47, Wisconsin white patent $7.92.

Pittsburgh: Neither bakers nor jobbers exhibit any interest in buying rye flour. Mills continue to make only small or no rye flour offerings. Bakers are reluctant to raise their prices for rye bread and hence restrict their offerings in this line. Rye flour, fancy white $7.65@7.75, medium $7.55@7.65, dark $7.35@7.45.

Millfeed Receipts and Shipments

Receipts and shipments of millfeed at the principal distributing centers for the week ending Nov. 30, in tons with comparisons:

	Receipts		Shipments	
	1946	1945	1946	1945
Kansas City ..	750	400	3,475	4,600
Philadelphia ..	180	360	...	...
Milwaukee ...	30	60	3,660	4,830
Week ending Dec. 7:				
Minneapolis ..	...	...	16,770	19,040
Kansas City ..	960	300	6,390	4,650
Philadelphia ..	150	360	...	...

Flaxseed Receipts, Shipments and Stocks

Receipts, shipments and stocks of flaxseed at principal primary points for the week ended Nov. 30, in thousand bushels:

	Receipts		Shipments		Stocks	
	1946	1945	1946	1945	1946	1945
Minneapolis..	230	303	5	26	3,905	5,026
Duluth	471	482	578	1,472	1,194	2,231
Week ending Dec. 7:						
Minneapolis..	226	294	37	9	3,886	4,941
Duluth	185	200	1,077	840	301	1,591

DIXIE LILY
A flour without an equal anywhere
Plain and Self-rising
THE BUHLER MILL & ELEVATOR CO.
BUHLER, KANSAS
Southern Sales Office
933-35 Exchange Bldg., Memphis, Tenn.

After all!
"THERE IS NO SUBSTITUTE FOR QUALITY"

There Is Nothing Uncertain About
BAY STATE FLOURS
milled from Guaranteed Hard Spring Wheat
They are flours that will produce a class of bakery goods not of average—but of
Excellent Quality
BAY STATE MILLING CO.
MANUFACTURERS OF
HARD SPRING WHEAT & RYE FLOURS
WINONA, MINNESOTA

Poultry Advisory Committee May Set Pattern for Other Industries

Washington, D. C.—In response to an inquiry from The Northwestern Miller concerning United States Department of Agriculture policy regarding the formation of postwar industry advisory committees, a highly placed USDA policy official stated that the USDA would welcome the formation of industry groups to consult with its specialists in formulating government policy. The first of such postwar groups was the poultry industry advisory committee which was announced recently.

This USDA official said that while the poultry industry group did represent the first of a postwar industry advisory group, it merely reflected the ever-present willingness of the government to draw on the advice of business men in adopting policies. Formation of other committee groups would result either at the request of an industry involved or by the USDA directly. The purpose of the USDA is to set up committees where a genuine need exists. It is not the purpose to create endless industry committees where no clearcut need is seen.

In the grain trade, for example, it was intimated that several groups might be advisable, such as wheat, corn and minor grain industry groups. Other groups are conceivable for the feed, flour and baking industries.

Trade Reactions Mixed

Reaction of trade groups to the USDA intention of forming industry groups for postwar operations has been mixed. First, the question was raised of legality of industry consultations which would affect trade practices, price policies of the government and other matters if the Second War Powers Act was terminated. During the war, industry committee groups met with and under the auspices of the government with liability for prosecution under the anti-trust laws waived through administrative sanction obtained through an exchange of correspondence between the attorney general and legal officers of the War Department and other agencies. The right of government officials to waiver prosecution under the anti-trust laws, even under the Second War Powers Act, has been challenged by informed observers here, but so far no test of the industry advisory committee war procedure has been made.

Critics of the administrative sanction policy used during the war contend that at some time in the future another government official might move against members of an industry advisory group under the anti-trust laws, even though apparently shielded from prosecution by waiver contained in the exchange of correspondence of government officials under the Second War Powers Act. Once the Second War Powers Act is ended, that danger of prosecution under the anti-trust laws seems greater.

Special Task Groups Better

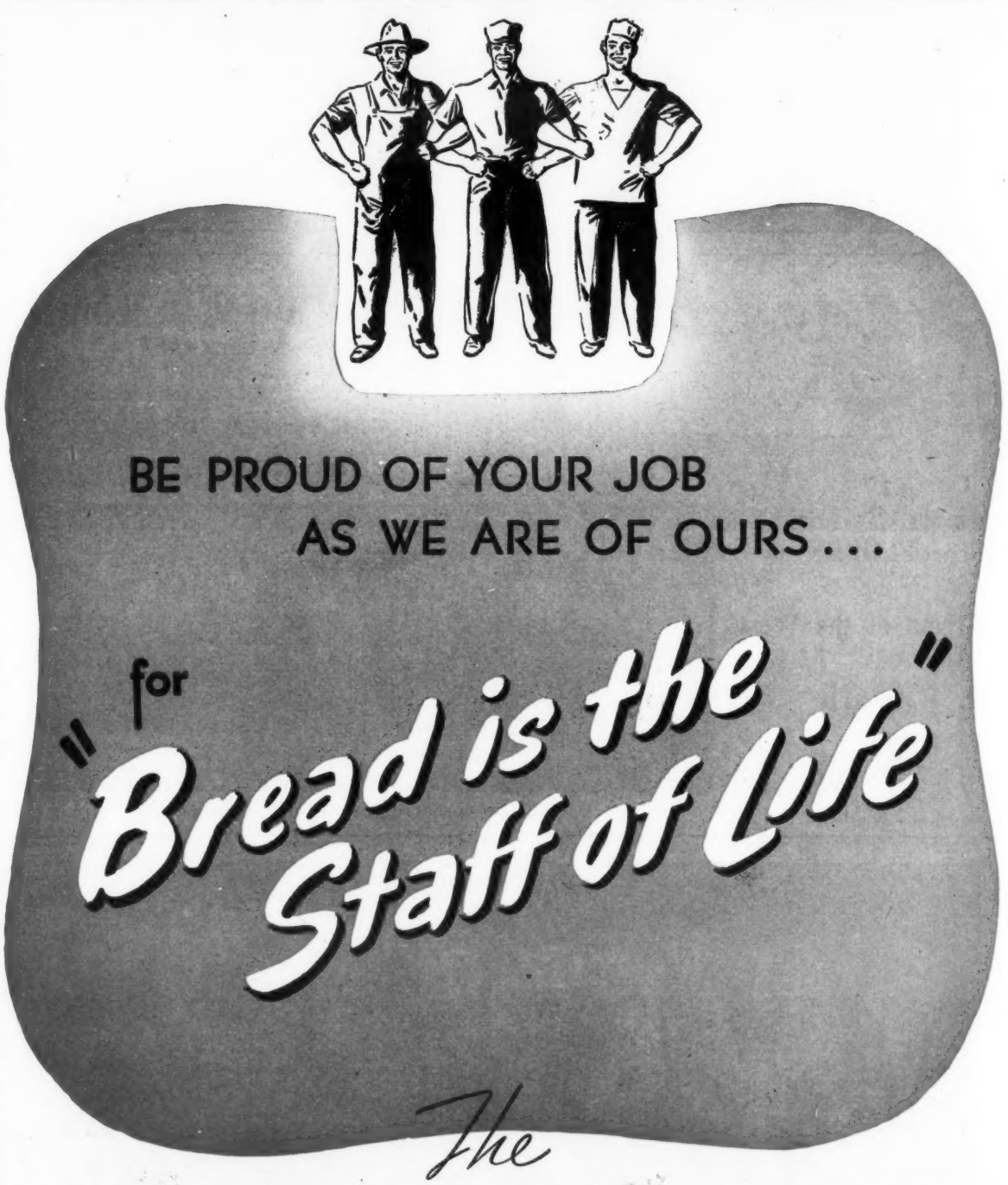
Doubt over the wisdom of industry participation in quasi-government committees which would help in the formulation of policy has been raised in government circles. Flour milling circles doubt, for example, that permanent committees would have any real value and it is believed that selected committees to handle special problems work out better for everyone involved.

Underlying industry doubt, it is believed, is the fear that the government might use the advice of industry groups as a shield for their policies if they were to be questioned by hostile congressional committees.

In connection with the formation of the USDA postwar poultry industry advisory committee, USDA officials say that this committee group will aim its efforts toward problems that will culminate in 1948, but which will come into being during the coming year. Price supporting operations in the egg and poultry field are not likely to occur in 1947, government officials predict, but they anticipate that production acceleration will begin next year and reach a peak in 1948, presenting to the government the necessity of fulfilling price support obligations at that time. The formulation of USDA policies in the coming year may very well be concentrated around production problems aimed at bringing farm production into line with estimated requirements in 1948.

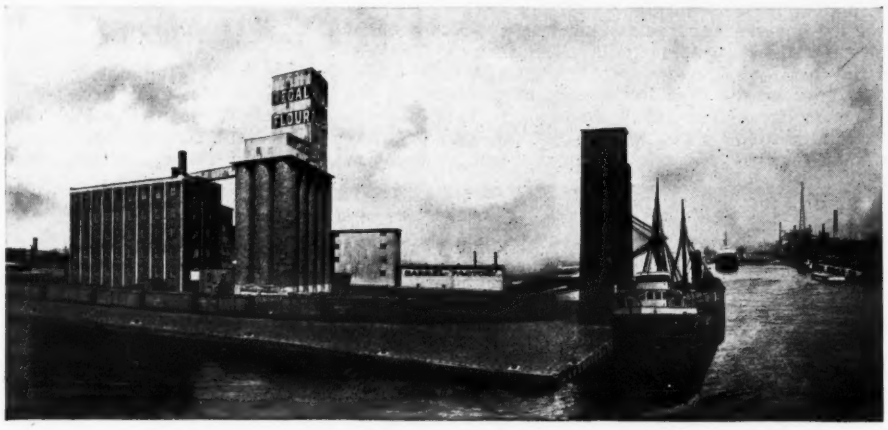
Acreage Controls Questioned

The right of the government to impose acreage restrictions on production of Steagall and nonbasic agricultural commodities has been raised in some quarters, since the



The St. Lawrence Flour Mills Co., Ltd.

MONTREAL • CANADA



Millers of Canadian
Hard Wheat Flours

"Regal"
"Fleur de Lis"
"National"
"Daily Bread"
"Citadel"

Quality uniformly maintained for over 25 years

Maple Leaf Milling Co. Limited.

HEAD OFFICE TORONTO, CANADA

EXPORT OFFICES:
TORONTO NEW YORK VANCOUVER

CABLE ADDRESS "MAPLEFLOUR" TORONTO, CANADA

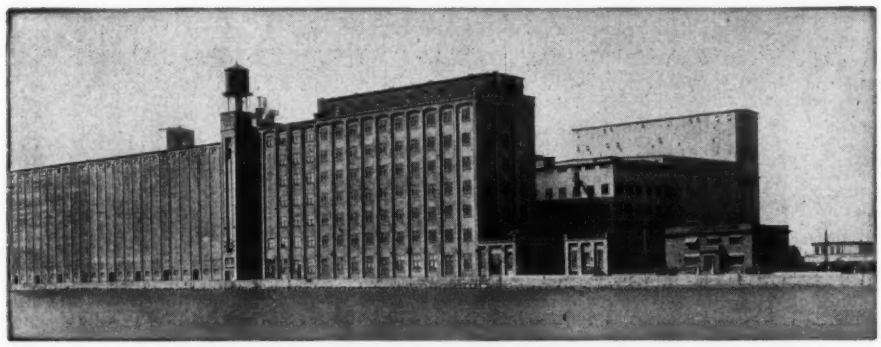
CANADA'S LARGEST FLOUR MILLERS

SPRING WHEAT FLOURS

Cream of the West

Castle

Nelson



WINTER WHEAT FLOURS

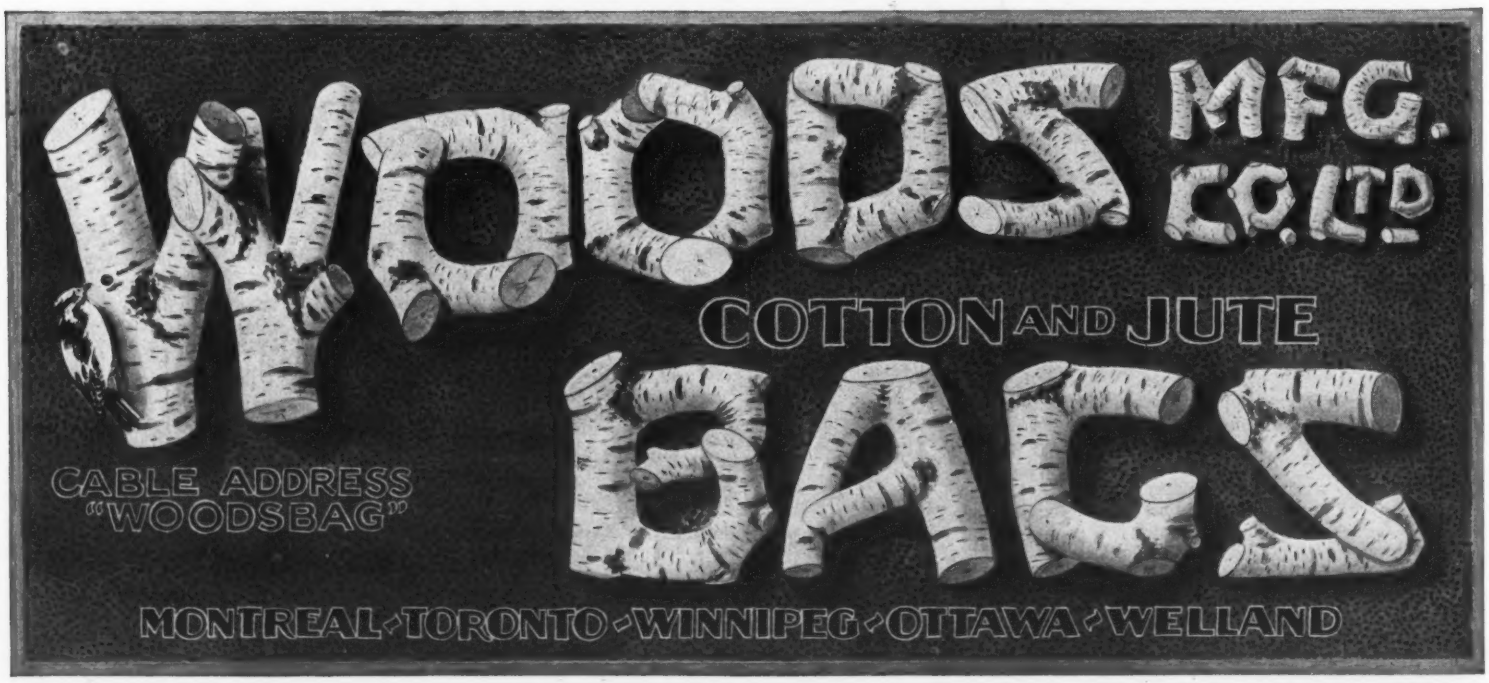
Monarch

Crescent

•

Canary Corn Meal

PORT COLBORNE MILLS—CAPACITY 12,000 BBLS. DAILY



WESTERN CANADA FLOUR MILLS COMPANY LIMITED

CABLE: LAKURON — TORONTO, CANADA

SPECIALISTS IN MILLING

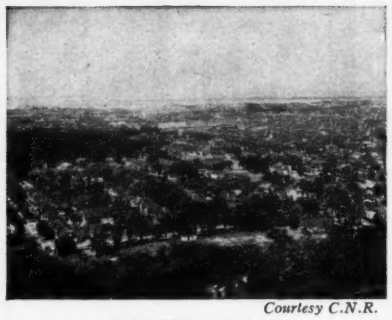
All Western Canada Hard Wheat Flours

PURITY • THREE STARS
CANADA CREAM • STERLING

GREAT WEST
BATTLE
MAITLAND
HURON

UNIFORM QUALITY GUARANTEED

FLOUR MILLING CAPACITY 9500 BBLS DAILY • ROLLED OATS AND OATMEAL 400 BBLS DAILY



Courtesy C.N.R.

HAMILTON, ONTARIO

Thirty-eight miles southwest of Toronto, on the western extremity of Lake Ontario, lies at the foot of a mountain which is a landmark to the city and offers a view unmatched in Southern Ontario.

Celebrating its Centenary this year, "The Ambitious City" has every reason to be justifiably proud of its accomplishments.

The availability of good water transportation and the proximity to Ontario's first major sources of electric power have led to Hamilton being chosen as a site by numerous industries. Today Hamilton prides itself on many firsts: Canada's first sewing machine; the first locomotive and railway cars; the world's first sleeping car; the first "iron" ship to sail the Great Lakes; the first match factory and the first sulphur matches; the first life insurance company in Canada; the first coal-oil lamps; all these "firsts" add fame to Hamilton.

JUTE BAGS COTTON

OLDEST ESTABLISHED MANUFACTURERS OF

JUTE **BAGS** COTTON

IN CANADA

Factories—MONTREAL - TORONTO

The CANADIAN BAG CO., Limited

Head Office: MONTREAL, QUEBEC

JUTE BAGS COTTON

CHOICEST CANADIAN *Hard Spring Wheat*

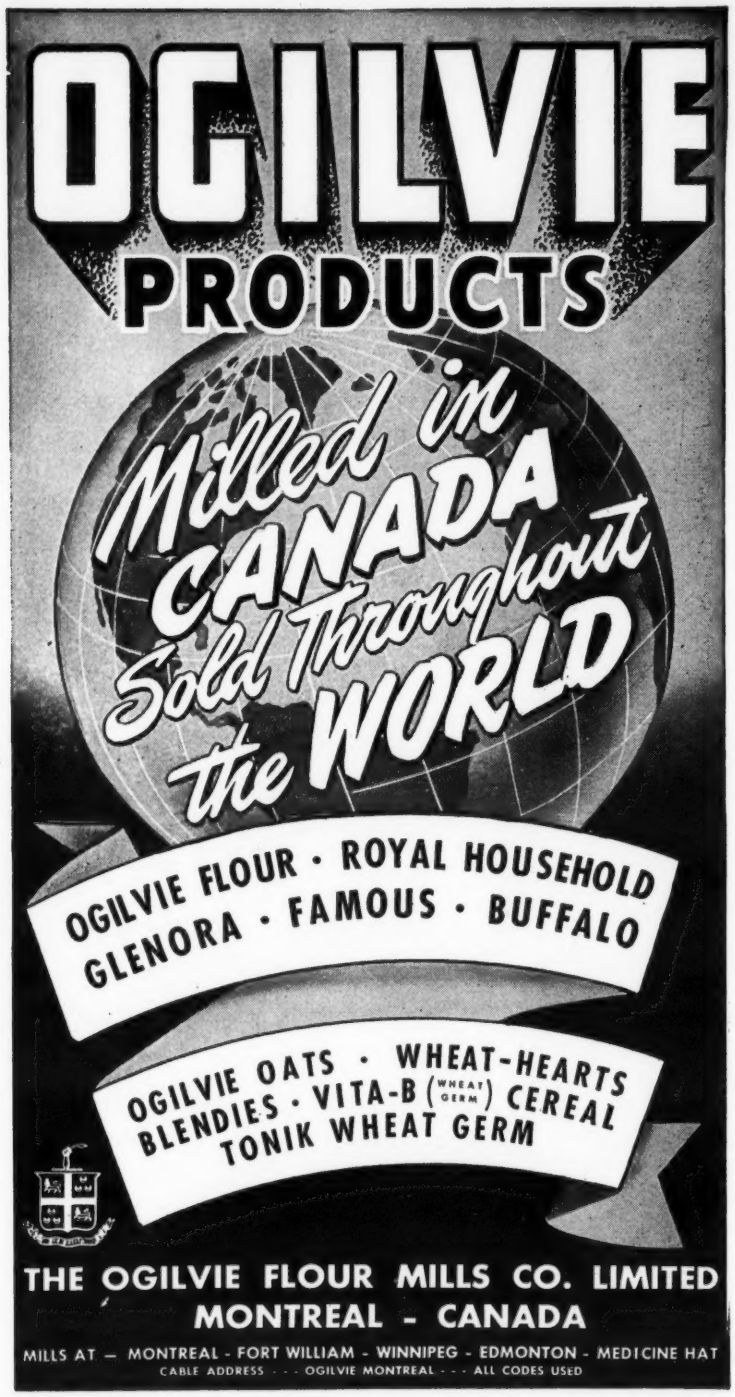
and perfect milling facilities have placed our products in the van.

BRANDS

"VICTORY" - "PRAIRIE BLOSSOM"
"WOODLAND" - - "HOMELAND"

THE DOMINION FLOUR MILLS, LTD.

Cable Address: "DOMFLOUR" MONTREAL, CANADA


OGILVIE
PRODUCTS
Milled in CANADA
Sold Throughout the WORLD
OGILVIE FLOUR · ROYAL HOUSEHOLD
GLENORA · FAMOUS · BUFFALO
OGILVIE OATS · WHEAT-HEARTS
BLENDIES · VITA-B (WHEAT GERM) CEREAL
TONIK WHEAT GERM
THE OGILVIE FLOUR MILLS CO. LIMITED
MONTREAL - CANADA
MILLS AT — MONTREAL - FORT WILLIAM - WINNIPEG - EDMONTON - MEDICINE HAT
CABLE ADDRESS - - - OGILVIE MONTREAL - - - ALL CODES USED

USDA has announced that acreage goals will be imposed on the 1947 potato crop. Influential Republican congressmen have spoken in opposition to unchecked use of price support operations which will stimulate production of a commodity in excess of normal and foreseeable domestic and export demand. At the same time, they oppose mandatory acreage restrictions by the government, believing that production limits should be determined by the farm producers themselves.

While there may be some merit in the industry fears that USDA might use industry advice as defense before congressional inquiries over policy it is felt in other quarters that it will be difficult to reject forthrightly any invitation to assist the government in forming policy. Already some grain interests have asked why the private grain trade did not have representation of the poultry industry group.

If formation of committees waits on trade initiative there may be some delay in getting groups organized, but if the initiative is taken by the USDA, industry may find that committees reflecting preponderant cooperative sentiment are the rule.

Export Flour INSURANCE

"All Risks"

Special Service to Flour Mills on Export and Domestic Ocean and Lake Insurance and Transportation

Thirty-Five Years' Experience in Export Flour Handling

Western Assurance Company

TORONTO, CANADA

F. C. THOMPSON CO., LTD.
Canadian Agents
Royal Bank Bldg., Toronto, Canada

APPLETON & COX, INC.,
American Agents
111 John Street, New York

TELCO

Grain Shippers
Domestic and Export

TORONTO ELEVATORS
LIMITED
Toronto Canada

CANADIAN HARD SPRING WHEAT

529 Elevators in Manitoba, Saskatchewan and Alberta.

UNITED GRAIN GROWERS, LTD.
Winnipeg, Manitoba

MUNGO SCOTT, Pty., Ltd.
FLOUR MILLERS

Cable Address: "SUPERB" — Established 1894

Summer Hill, Sydney, N.S.W., Australia

COATSWORTH & COOPER
LIMITED

C A N D C

Grain and Feeds

Exporters

TORONTO, CANADA

GILLESPIE BROS., Pty., Ltd.
FLOUR MILLERS
SYDNEY, N.S.W., AUSTRALIA
CABLE ADDRESS, "GILLESPIE," SYDNEY

W. S. KIMPTON & SONS
Flour Millers
MELBOURNE, AUSTRALIA
Cables: "GLUTEN," Melbourne

R. C. PRATT
Exporter
FLOUR, CEREALS, FEEDS
68 King Street, East
TORONTO, CANADA

SPILLERS LIMITED

Millers of the
HIGHEST QUALITY FLOUR
and Manufacturers of
PROVENDER AND BALANCED RATIONS
FOR ALL CLASSES OF FARM STOCK

Head Office:
40, St. Mary Axe, E. C. 3.
LONDON, ENGLAND

Cables:
"Milligroup"
London

Since 1857

James Richardson & Sons
LIMITED

Grain Merchants Shippers and Exporters

WINNIPEG · CANADA
Export Offices - MONTREAL and VANCOUVER
Cable Address: "JAMESRICH"

PARRISH & HEIMBECKER, LIMITED
Domestic and Export
Flour, Feed and Grain
Export Office — TORONTO, CANADA

GREAT STAR FLOUR MILLS, Ltd.
Successors to Wolverton Flour Mills Co., Ltd.
Canadian Spring and Winter Wheat Flour
"SILVERKING" "GREAT STAR" "WOLF" "KEYSTONE"
Cable Address. "WOLMACS" ST. MARY'S, ONTARIO, CANADA

QUALITY UNIFORMLY MAINTAINED SINCE 1887

Lake of the Woods Milling Co., Limited

Cable Address
"HASTINGS"
Montreal

ALL
CABLE CODES
USED

Makers of CANADIAN HARD SPRING WHEAT *Flour*

Owning and Operating
Wheat-Receiving Elevators in Manitoba,
Saskatchewan and Alberta

Mills at
Brantford, Keewatin, Medicine Hat

HEAD OFFICE: MONTREAL

WESTERN OFFICE: WINNIPEG

LAKESIDE MILLING COMPANY, Ltd.
"BLOSSOM *of* CANADA" "YORK" "NORDIC"
Cable Address: LAKESIDE TORONTO, CANADA

ROBIN'S BEST FLOUR
The ROBINSON MILLING COMPANY
SALINA, KANSAS

"SUPERFLOUR"
"BUFFALO"
Tops in Bakery Flours
★ ★
THE WILLIS NORTON CO.
Quality Millers Since 1879
Capacity 3,000 Cwts. WICHITA, KANSAS

An EXTRA HOUR OF DOUGH STABILITY WITH WISDOM DIA-GLUTEN FLOUR

A new development which greatly extends fermentation tolerance. Provides more time for "cutting over" or giving dough extra punches. If you want a flour which will stand abuse, write or wire
NEBRASKA CONSOLIDATED MILLS COMPANY
1521 N. 16th St. OMAHA, NEBRASKA

JOHN E. KOERNER & CO.
DOMESTIC EXPORT
FLOUR
P. O. Box 646 731 LaSalle St.
NEW ORLEANS, U. S. A.

KELLY-ERICKSON CO.
Flour Brokers
OMAHA, NEB.
Offices:
New York City and San Francisco

ALFALFA MEAL
Sun-Cured and Dehydrated
NATIONAL ALFALFA DEHYDRATING & MILLING CO.
Lamar, Colo. St. Louis, Mo.
Chandler, Ariz. Charleston, Mo.

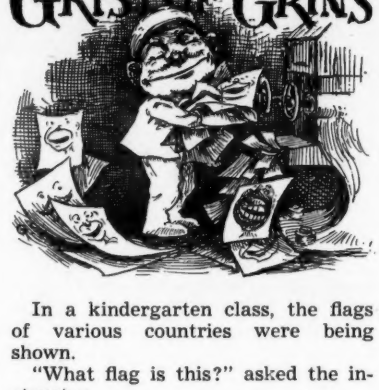
HUBERT J. HORAN
FOREIGN FLOUR DOMESTIC
31st and Chestnut Streets
PHILADELPHIA 4, PA.

Francis M. Franco
FLOUR
Produce Exchange, NEW YORK

FLOUR
Broker and Merchandiser
DAVID COLEMAN, Incorporated
Members N. Y. Produce Exchange
Produce Ex. - NEW YORK
New England Office: 211 Bryant St., Malden, Mass.

S. R. STRISIK CO.
Flour Mill Agents
Produce Exchange NEW YORK

GRIST OF GRINS



In a kindergarten class, the flags of various countries were being shown.

"What flag is this?" asked the instructor.

"This is the flag of my country," answered a bright little tot.

"And what is the name of your country?" was the next question.

"'Tis of Thee," came the prompt reply.

◆ ◆ ◆

Lady (indignantly, after crash): I turned the way I signaled.

Man: I know it. That's what fooled me.

◆ ◆ ◆

A motorist had been haled into court and when his name was called the judge asked what the charges were against the prisoner.

"Suspicious actions, your honor," answered the arresting officer.

"Suspicious actions?" queried the judge. "What was he doing that seemed suspicious?"

"Well," replied the officer, "he was running within the speed limit, sounding his horn properly, keeping on the right side of the street, and not trying to beat any of the stop lights—so, naturally, I arrested him."

◆ ◆ ◆

The telephone rang. "This is Perkins, Parkins, Peckham & Potts. Good morning."

"I want Mr. Perkins, please."

"Who is calling, please?"

"Mr. Pincham of Pincham, Pettum, Poppum & Pogg."

"Just a minute, please. I'll give you Mr. Perkins' office."

"Hello. Mr. Perkins' office."

"Let me speak to Mr. Perkins."

"Mr. Perkins? I'll see if he is in. Who's calling, please?"

"Mr. Pincham of Pincham, Pettum, Poppum & Pogg."

"Just a minute, Mr. Pincham. Here's Mr. Perkins. Mr. Pincham on the line, please."

"Just one moment, please. I have Mr. Pincham right here. Okay with Perkins, Parkins, Peckham & Potts. Mr. Pincham. Go ahead, please."

"'Lo, Joe. How about lunch?"

"Okay."

◆ ◆ ◆

Joe: Have you forgotten that you owe me $5?

Jim: Not yet. Give me a little time.

◆ ◆ ◆

Patient: Doctor, are you sure I have pneumonia? Sometimes doctors prescribe for one ailment and the patient dies of another.

Doctor (with dignity): When I prescribe for pneumonia, my patients die of pneumonia.

◆ ◆ ◆

A Harvard man was showing an ex-RAF flyer the sights of his beloved Boston.

"This is where Warren fell, you know," he remarked.

The ex-flyer shaded his eyes and looked up at the mountain. "Nasty fall," he said. "Killed him, no doubt?"

FLOUR—GRAIN PRODUCTS
Oilseed Cakes and Meals
Feedstuffs — Vegetable Oils
●
BRADLEY & BAKER
Commerce Building New York 17
Cable Address: Bradbake — All Codes

Brand Trouble?
Maybe we can help you. For half a century The Northwestern Miller has maintained a list of flour trademarks used in the United States and Canada. The file is available for the use of readers of this journal. Ask us—we'll gladly thumb through the cards for you.
The Northwestern Miller
118 South Sixth St. Minneapolis, Minn.

COHEN E. WILLIAMS & SONS
Nashville, Tenn.
FLOUR BROKERS
PHONE L. D. 16 CABLE ADDRESS: COWIL

HABEL, ARMBRUSTER & LARSEN CO.
All FLOUR Grades
410-420 N. Western Ave., CHICAGO, ILL.

THE FRANK R. PRINA CORPORATION
Domestic FLOUR Export
LIVE WIRES—CONNECT!
500 Fifth Avenue NEW YORK

H. J. GREENBANK & COMPANY
FLOUR
PRODUCE EXCHANGE NEW YORK, N. Y.

WHITE & COMPANY
"The Flour People"
313 Chamber of Commerce Bldg
Baltimore 2, Md.

Flour Specialists Quality and Price Flour
M. S. Brownold Co.
Successors to D. G. Van Dusen & Co.
80 BROAD ST. NEW YORK

KNIGHTON FOR FLOUR
NEW YORK BOSTON
PHILADELPHIA

We are always in the Market for Hard and Soft Wheat Flours
GENERAL BAKING COMPANY
420 Lexington Ave. NEW YORK CITY

REPRESENTATIVE FLOUR IMPORTERS OF FOREIGN COUNTRIES

Established 1870
STANNARD COLLINS & CO.
(E.A.GREEN)
IMPORTERS OF FLOUR, CEREALS AND CEREAL PRODUCTS
Cory Buildings
Fenchurch Street **LONDON, E. C. 3**
Cable Address: "Famed," London

Cable Address: "DORFEACH," London
MARDORF, PEACH & CO., Ltd.
FLOUR IMPORTERS
52, Mark Lane,
LONDON, E. C. 3

COVENTRY, SHEPPARD & CO.
FLOUR IMPORTERS
17, Corn Exchange Chambers
LONDON, E. C. 3
Cable Address. "COVENTRY," London

C. E. FEAST & CO.
(CHAS. E. FEAST)
FLOUR IMPORTERS
Subscription Room
Seething Lane, **LONDON, E. C. 3**
Cable Address "Feastanco," London.

Cable Address: "TRONTOPRI," London
SIDNEY SMITH
(FLOUR, FEED & GRAIN, LTD.)
52 Mark Lane **LONDON, E. C. 3**
FLOUR, GRAIN, FEED, CORN AND CEREAL PRODUCTS
Codes: Riverside, A B C 5th Ed., also Bentley and Western Union 5 Letter Codes

PILLMAN & PHILLIPS
FLOUR IMPORTERS
LONDON, LIVERPOOL, BRISTOL, DUBLIN, BELFAST

FENNELL, SPENCE & CO.
IMPORTERS OF GRAIN, FLOUR, LINSEED AND COTTONSEED PRODUCTS, FEED, ETC.
20, Chapel Street, **LIVERPOOL, ENG.**
Cable Address: "FENNELL," Liverpool

HARRIS BROS. & CO. (Grain) Ltd.
COMMISSION AGENTS and FACTORS
GRAIN SEEDS, OIL, FEEDINGSTUFFS and FLOUR
Corys' Buildings
57/59 St. Mary Axe **LONDON, E. C. 3**
9 Brunswick Street **LIVERPOOL**
68 Constitution Street **LEITH**
81 Hope Street **GLASGOW**

CRAWFORD & LAW
FLOUR IMPORTERS
50 Wellington Street **GLASGOW, C. 2**
and at 27, Corn Exchange Chambers
LONDON, E. C. 3
Cable Address: "CAMELLIA," Glasgow

WILLIAM MORRISON & SON
LTD.
FLOUR IMPORTERS
Baltic Chambers
50 Wellington Street **GLASGOW**
Cable Address. "WAVERLEY"

ANDREW TAYLOR & CO.
(GLASGOW) LTD.
IMPORTERS OF
FLOUR, CEREALS, OATMEALS, GRAIN
163, Hope Street, **GLASGOW**
Cable Address: "Goldenglo," Glasgow

ROBERT CARSON & CO.
LTD.
FLOUR IMPORTERS
50 Wellington St. **GLASGOW**
Cable Address. "DIPLOMA," Glasgow

FARQUHAR BROTHERS
FLOUR MERCHANTS
50 Wellington Street **GLASGOW, C.2**
C. I. F. business much preferred.
Cable Address: "Glencairn," Glasgow

McCONNELL & REID, LTD.
FLOUR IMPORTERS
19 Waterloo St. **GLASGOW**
Cable Address: "MARVEL," Glasgow

D. T. RUSSELL & BAIRD, Ltd.
45 Hope Street **GLASGOW**
IMPORTERS OF
FLOUR, OATMEALS, CEREALS
OFFICES ALSO AT
LIVERPOOL **LEITH**
DUBLIN **BELFAST**

WATSON & PHILIP, LTD.
FLOUR IMPORTERS
155 Wallace St., **GLASGOW, C. 5**
41 Constitution St., **LEITH**
Esplanade Buildings, **DUNDEE**
42 Regent Quay, **ABERDEEN**
Cables: "PHILIP," Dundee

N. V. Agentuur & Commissiehandel v/h P. C. VIS & CO.
AMSTERDAM
FLOUR IMPORTERS
Established 1874 Cable Address: "Visco"

H. J. B. M. RADEMAKER
GENERAL AGENCY
Solicits Correspondence With Shippers of FLOUR, CEREALS, FEED, SEEDS AND PULSE
Joh. Verhuiststraat 141
AMSTERDAM, Z.
Cable Address: "Vos"
Codes: Riverside, Bentley's
Wieger's Blitz (1908 & 1929)

GRIPPELING & VERKLEY N. V.
FLOUR SPECIALISTS SINCE 1889
AMSTERDAM
Cable Address: Bygrip, Amsterdam
Codes: Bentley's Complete Phrase, A.B.C. 5th Ed., Riverside, Private
Bankers: Twentsche Bank, Amsterdam Reference: Guarantee Trust, New York

LUCHSINGER, MEURS & CO.'S.
HANDELMAATSCHAPPIJ, N. V.
AMSTERDAM—C.
FLOUR IMPORTERS
Correspondence on Bakery Products Solicited.
Bankers: Nederlandsche Handel-Maatschappij N. V. Cable Address: "Matluch"

STOLP & CO., LTD.
FLOUR IMPORTERS
Also Importers of All Kinds of
WHEAT AND RYE FLOURS, SEMOLINA AND ROLLED OATS
Represented in Central Europe and Belgium
Damrak 47-48, **AMSTERDAM, HOLLAND**
Cable Address: "Cleo." All Codes Used. Bankers: Amsterdamsche Bank

FELIX COHEN
FLOUR IMPORTERS SINCE 1879
Provenierssingel 81A **ROTTERDAM, HOLLAND**
(Postbox 196)
Cable Address: "FELIXCOHEN" Reference: De Twentsche Bank

TARVO MEELFABRIEK M. J. VOS
(Successor M. J. Vos)
HAARLEM, HOLLAND
(Established 1908)
IMPORTER OF ALL KINDS OF FLOUR AND CEREALS
Samples and Offers Solicited
Bankers: Nederlandsche Handel Mij. N. V. Cable Address: "TARVO," Haarlem

Established 1885
BULSING & HESLENFELD
FLOUR IMPORTERS
Also Handling Bakers' Sundries
Solicit Correspondence From Manufacturers and Exporters
Cable Address: "Heslenfeld," Amsterdam
Damrak 20-22 **AMSTERDAM (C)**

VERHOEFF'S MEEL-IMPORT
(late Hatenboer & Verhoeff)
Importers of
FLOUR, FEEDINGSTUFFS, ETC.
ROTTERDAM, HOLLAND
Cables: Radium Corr.: Postbox 1151
Ref.: Incasso-Bank N. V., Rotterdam
Guaranty Trust Co., New York

N. V. GEBRS. VAN DEN BERGH'S
KONINKLIJKE FABRIEKEN
P. O. BOX 82, ROTTERDAM
BIGGEST BUYERS OF ALL KINDS OF FLOUR AND FEEDSTUFFS
References:
De Twentsche Bank, N. V., Rotterdam
The Guarantee Trust Co., New York
Cable Address: "Locomotion," Rotterdam

JAMES ALLEN & CO., (Belfast) Ltd.
FLOUR AND CEREAL PRODUCT IMPORTERS
Ulster Bank Chambers, 73 May Street
BELFAST, IRELAND
Cable Address: "ANCHOR," Belfast

TROELS FODE
MILLERS' AGENT & IMPORTER
Kompagnistraede 32, **COPENHAGEN, K. DENMARK**
Specializes in Flour, Cereals, Feed and Bakers' Supplies
Cable Address: "Trofo," Copenhagen

LØKEN & CO. A/S
Established 1871 **OSLO, NORWAY**
Working Norway, Finland, Denmark and Sweden
Reference:
Chase National Bank of the City of New York, N. Y.
Midland Bank, Ltd., Poultry & Princes St., London

FEEDSTUFFS—*The Feedman's weekly newspaper*
118 So. 6th St. Minneapolis, Minn.
Serves The Growing Feed Industry

Low Grades and Millfeed
I. S. JOSEPH CO., INC.
Minneapolis, Minn.

KELLY Flour Co.
DOMESTIC Merchandisers EXPORT
919 No. Michigan Ave.
CHICAGO

A. DE SWAAN
Flour for Export
80 WALL ST. NEW YORK CITY 5
HANOVER 2-2636

Johnson-Herbert & Co.
FLOUR
444 W. Grand Ave. CHICAGO

ANALYSES
FLOUR—CEREAL—GRAIN
Dependable, Prompt Service
Siebel Institute of Technology
960 Montana CHICAGO, Ill.

• INDEX OF ADVERTISERS •

"A" series of page numbers used to index advertisements appearing in Section Two of this issue.

A

Abilene Flour Mills Co. 6
Acme-Evans Co. 19
Acme Flour Mills Co. 29
Allen, James, & Co. (Belfast), Ltd. 47
Alva Roller Mills .....
Amber Milling Co. 6
Amendt Milling Co. 29
American Bag Co. 19a
American Bakers Machinery Co. .....
American Cyanamid Co. .....
American Dry Milk Institute, Inc. .....
American Flours, Inc. 29
American Machine & Foundry Co. .....
Ames Harris Neville Co. 3
Anheuser-Busch, Inc. .....
Appraisal Service Co., Inc. 12a
Archer-Daniels-Midland Co. 27
Arnold Milling Co. 26
Arrow Mills, Inc. 7, 22
Atkinson Milling Co. 19

B

Bagpack, Inc. .....
Baker Perkins, Inc. .....
Bang, Flemming .....
Barnett & Record Co. 24a
Baxter, A. E., Engineering Co. 8a
Bay State Milling Co. 40
Bemis Bro. Bag Co. 9a
Big Jo Flour Mills 2
Bjornstad, Asbjorn P. .....
Black Bros. Flour Mills 31
Blair Milling Co. 19
Blake, J. H. .....
Blodgett, Frank H., Inc. 27
Borden Co. .....
Bowersock Mills & Power Co. 31
Bowman Dairy Co. .....
Bowsher, N. P., Co. 8a
Bradley & Baker 46
Brey & Sharpless .....
Broenniman Co., Inc. .....
Brownold, M. S., Co. 46
Brown's Hungarian Corp. .....
Bryo Company, The .....
Buhler Mill & Elevator Co. 40
Bulsing & Heslenfeld 47
Bunge Elevator Corp. 31

C

Cameron, John F., & Co. .....
Canadian Bag Co., Ltd. 43
Canadian-Bemis Bag Co., Ltd. 45
Canadian Mill & Elevator Co. .....
Cannon Valley Milling Co. 29
Capital Flour Mills, Inc. 27
Cargill, Incorporated 6
Carr, P. E., & Carr, Pedro, Jr. .....
Carson, Robert, & Co., Ltd. 47
Centennial Flouring Mills Co. 3
Central Bag & Burlap Co. 12a
Chandler, Arthur L., & Co. 40
Chase Bag Co. 13a
Chatfield & Woods Sack Co. 12a
Checkerboard Elevator Co. 5a
Chicago, So. Shore & So. Bend R. R. .....
Chickasha Milling Co. 22
Chubb & Son 27
Coatsworth & Cooper, Ltd. 44
Cohen, Felix 47
Colborne Mfg. Co. .....
Coleman, David, Inc. 46
Colorado Milling & Elevator Co. .....
Commander-Larabee Milling Co. 5
Consolidated Flour Mills Co. 41
Continental Grain Co. 3
Corn Products Sales Co. .....
Coventry, Sheppard & Co. 47
Crawford & Law 47
Cream of Wheat Corp. 6
Crete Mills, The 6
Crookston Milling Co. 29
Crown Bag Co. 24a
Crown Mills 3

D

Dairymen's League Co-operative Association, Inc. .....
Davis & Company .....
Davis-Noland-Merrill Grain Co. 18
Day Co. 22a
De Lisser, Andrew .....
De Stefano, Ulysses .....
De Swaan, A. 47
Deutsch & Sickert Co. .....
Diamond Crystal Salt Co., Inc. 26a
Dings Magnetic Separator Co. 21a
Dixie-Portland Flour Co. 3
Dobry Flour Mills, Inc. 19
Dominion Flour Mills, Ltd. 43
Doughnut Corporation of America .....
Dow Chemical Co. .....
Duluth Universal Milling Co. 19
Duncan, Wm. C., & Co., Inc. .....
Dunwoody Institute 11a

E

Eagle Roller Mill Co. 2
Eastern State Farmers' Exchange 29
Eckhart, B. A., Milling Co. 5a
Enns Milling Co. 29
Entoleter Division, Safety Car Heating & Lighting Co., Inc. 8a
Essmueller Co. 7a
Evans Milling Co. 26

F

Farmers & Merchants Milling Co. 29
Farquhar Bros. 47
Feast, C. E., & Co. 47
Federal Mill, Inc. 26
Fennell, Spence & Co. 47
Ferbo Co. .....
Finger Lakes Division of Arrow Mills, Inc. 22
Fisher-Fallgatter Milling Co. 31
Fisher Flouring Mills Co. 3
Florelius & Ulsteen a/s .....
Flour Mills of America, Inc. .....
Fode, Troels 47
Fort Garry Flour Mills Co., Ltd. .....
Franco, Francis M. 46
Freeman Food Products Co. .....
Fulton Bag & Cotton Mills 10a

G

Gallatin Valley Milling Co. .....
Garland Milling Co. .....
General Baking Co. 46
General Mill Equipment Co. 18a
General Mills, Inc. .....Cover 4
Gillespie Bros., Ltd. 44
Globe Milling Co. 27
Godde, Albert, Bedin, Inc. 21a
Goldschmidt, Carl, Ltd. .....
Gooch Milling & Elevator Co. 2
Goodlander Mills Co. .....
Great Bend Milling Company .....
Great Star Flour Mills, Ltd. 44
Greenbank, H. J., & Co. 46
Grippeling & Verkley 47

H

Haaky Mfg. Co. 16a
Habel, Armbruster & Larsen Co. 46
Hachmeister, Inc. .....
Hamm, J. M., & C. M. .....
Hammond Bag & Paper Co. .....
Hardesty Milling Co. 29
Harris Bros. & Co., Ltd. 47
Hart-Bartlett-Sturtevant Grain Co., Inc. 27
Hart-Carter Co. 28a
Heide, Henry, Inc. .....
Henkel Flour Mills .....
Hoffman, U. S., Machinery Corp. 12a
Hoffmann-La Roche, Inc. 23a
Holland Engraving Co. 31
Hookway, F. E., & Co., Ltd. .....
Horan, Hubert J. 46
Hosmer, Calvin, Stolte Co. .....
Howie, The J. K., Co. 12a
Hubbard Milling Co. 31
Hunter Milling Co. 19

I

Igleheart Bros., Inc. 29
Imbs, J. F., Milling Co. 2
Industrial Fumigant Co., Inc. 21a
Innis, Speiden & Co. 10a
International Milling Co. .....Cover 2
Ismert-Hincke Milling Co. 31

J

Jaeger, Frank, Milling Co. .....
Jas & Van Walbeek .....
Jennison, W. J., Co. 22
Jewell, L. R., & Son 6
Johansen, Anth., & Co. .....
Johnson-Herbert & Co. 47
Jones-Hettelsater Construction Co. 8a
Joseph, I. S., Co., Inc. 47
Junction City Milling Co. .....

K

Kalamazoo Vegetable Parchment Co. .....
Kansas Flour Mills Company 8
Kansas Milling Co. 10a
Katz, Max, Bag Co. 26a
Kelly-Erickson Co. 46
Kelly Flour Co. 47
Kelly, William, Milling Co. 7
Kenser, Charles H. 26
Kent, Percy, Bag Co., Inc. 17
Kimpton, W. S., & Sons 44
King, H. H., Flour Mills Co. 6
King Midas Flour Mills 26
King Milling Co. 31
Kipp-Kelly, Ltd. .....
Knighton, Samuel, & Sons, Inc. 46
Koerner, John E., & Co. 46

L

La Grange Mills 6
Lake of the Woods Milling Co., Ltd. 45
Lakeside Milling Co., Ltd. 45
Larrowe Mills, Inc. 29
Lathrop Grain Corporation 4
Lever Bros. Co. .....
Lexington Mill & Elevator Co. .....
Loken & Co. 47
Long, W. B., Co. 2
Luchsinger, Meurs & Co. 47
Lyon & Greenleaf Co., Inc. 26
Lysle, J. C., Milling Co. 31

M

McConnell & Reid, Ltd. 47
McKinnon & McDonald, Ltd. .....
McLean, W. D. .....
McVeigh & Co. 2
Maney Milling Co. 26
Maple Leaf Milling Co., Ltd. 42
Mardorf, Peach & Co., Ltd. 47
Marsh & McLennan, Inc. 6
N. V. "Meelunie," Amsterdam .....
Mennel Milling Co. .....
Merck & Co., Inc. 2a
Merrill, Harold A. .....
Merrill Lynch, Pierce, Fenner & Beane. .....
Mid-Kansas Milling Co. .....
Midland Flour Milling Co. 6
Mid-West Laboratories Co., Inc. 8a
Milling Engineers, Inc. 26
Mill Mutual Fire Prevention Bureau 10a
Miner-Hillard Milling Co. 6
Minneapolis Grain Exchange 21
Minot Flour Mill Co. 29
Monsanto Chemical Co. .....
Montana Flour Mills Co. .....
Moore-Lowry Flour Mills Co. 31
Moore-Seaver Grain Co. 26
Morris, Cliff H., & Co. .....
Morrison Milling Co. 29
Morrison, Wm., & Son, Ltd. 47
Moundridge Milling Co. 22

N

National Alfalfa Dehydrating & Milling Co. 46
National Almond Products Co. .....
National Cotton Council of America .....
National Grain Yeast Corp. .....
Neahr, M. J., & Co. .....
Nebraska Consolidated Mills Co. 46
Nehemkis, Peter R., Sr. .....
Neill, Robert, Ltd. .....
New Century Co. .....
New Era Milling Co. 27
New Jersey Flour Mills Co. .....
Newton Milling & Elevator Co. .....
Noblesville Milling Co. .....
Norenberg & Belsheim .....
Norris Grain Co. 18
North Dakota Mill & Elevator .....
Norton, Willis, Co. 46
Norvell-Williams, Inc. 26a
Novadel-Agene Corp. .....Cover 3

O

Ogilvie Flour Mills Co., Ltd. 44
Omega Machine Co. (Division of Builders Iron Foundry) 24a
Osieck & Co. .....

P

Page, Thomas, Milling Co. .....
Paniplus Company .....
Parrish & Heimbecker, Ltd. 44
Pearlstone, H. S., Co. .....
Peek Bros. .....
Pfeffer Milling Co. 22
Pfizer, Chas., & Co., Inc. 25a
Pillman & Phillips 47
Pillsbury Mills, Inc. 1
Pittsburgh Plate Glass Co., Columbia Chemical Division 21a
Pratt, R. C. 44
Preston-Shaffer Milling Co. 3
Prina, Frank R., Corp. 46
Procter & Gamble .....

Q

Quaker Oats Company .....

R

Rademaker, H. J. B. M. 47
Raible, J. R., Co. .....
Red River Milling Co. 29
Red Star Yeast & Products Co. .....
Red Wing Milling Co. 2
Richardson, James, & Sons, Ltd. 44
Richmond Mfg. Co. 24a
Riegel Paper Corp. .....
Robin Hood Flour Mills, Ltd. 45
Robinson Milling Co. 46
Robinson, Thomas, & Son, Ltd. 8a
Rodent Control Co. 22a
Rodney Milling Co. 26
Rogers Bros. Seed Co. .....
Ross Milling Co. 26
Ruoff, A., & Co. .....
Russell, D. T., & Baird, Ltd. 47
Russell-Miller Milling Co. 31
Russell Milling Co. 29
Rutherford, W. H., & Co. .....

S

St. Cloud Milling Co. 22
St. Joseph Testing Laboratories, Inc. 12a
St. Lawrence Flour Mills Co., Ltd. 42
St. Regis Sales Corporation 27a
Saxony Mills 19
Schneider, W. H., Co. .....
Schultz, Baujan & Co. 26a
Scott, Mungo, Ltd. 44
Security Milling Co., Inc. .....
Seedburo Equipment Co. .....
Service Bag & Burlap Co., Inc. .....
Shellabarger Mills 22
Sheridan Flouring Mills, Inc. 31
Shevelove, J. J. .....
Short, J. R., Milling Co. .....
Siebel Institute of Technology 47
Simonds-Shields-Theis Grain Co. 18
Skandinavisk Mel Import .....
Smith, Sidney, Flour, Feed & Grain, Ltd. 47
Southwestern Laboratories 18a
Spillers, Ltd. 44
Spindler, L. G. .....
Spokane Flour Mills Co. 3
Sprake & Co. 22a
Springfield Milling Corp. 2
Sprout-Waldron & Co. 20a
Stanard-Tilton Division (Russell-Miller Milling Co.) .....
Standard Brands, Inc. .....
Standard Milling Co. 31
Stannard, Collins & Co. 47
Stivers, Theo. .....
Stock, F. W., & Sons, Inc. .....
Stolp & Co., Ltd. 47
Stratton Grain Co. .....
Strisik, S. R., Co. 46
Sullivan & Kennedy .....
Swift & Co. .....

T

Tanner-Evans-Siney Corp. .....
Taylor, Andrew, & Co., Ltd. 47
Tennant & Hoyt Co. 7
Tension Envelope Corp. 7
Terminal Flour Mills Co. 3
Textile Bag Manufacturers Association .....
Thomas, A. Vaughan .....
Thompson Flour Products, Inc. .....
Tidewater Grain Co. 20
Tobler, Ernst & Traber, Inc. 17a
Toronto Elevators, Ltd. 44
Transit Grain Co. 31
Tri-State Milling Co. .....
Twin City Machine Co. 26a

U

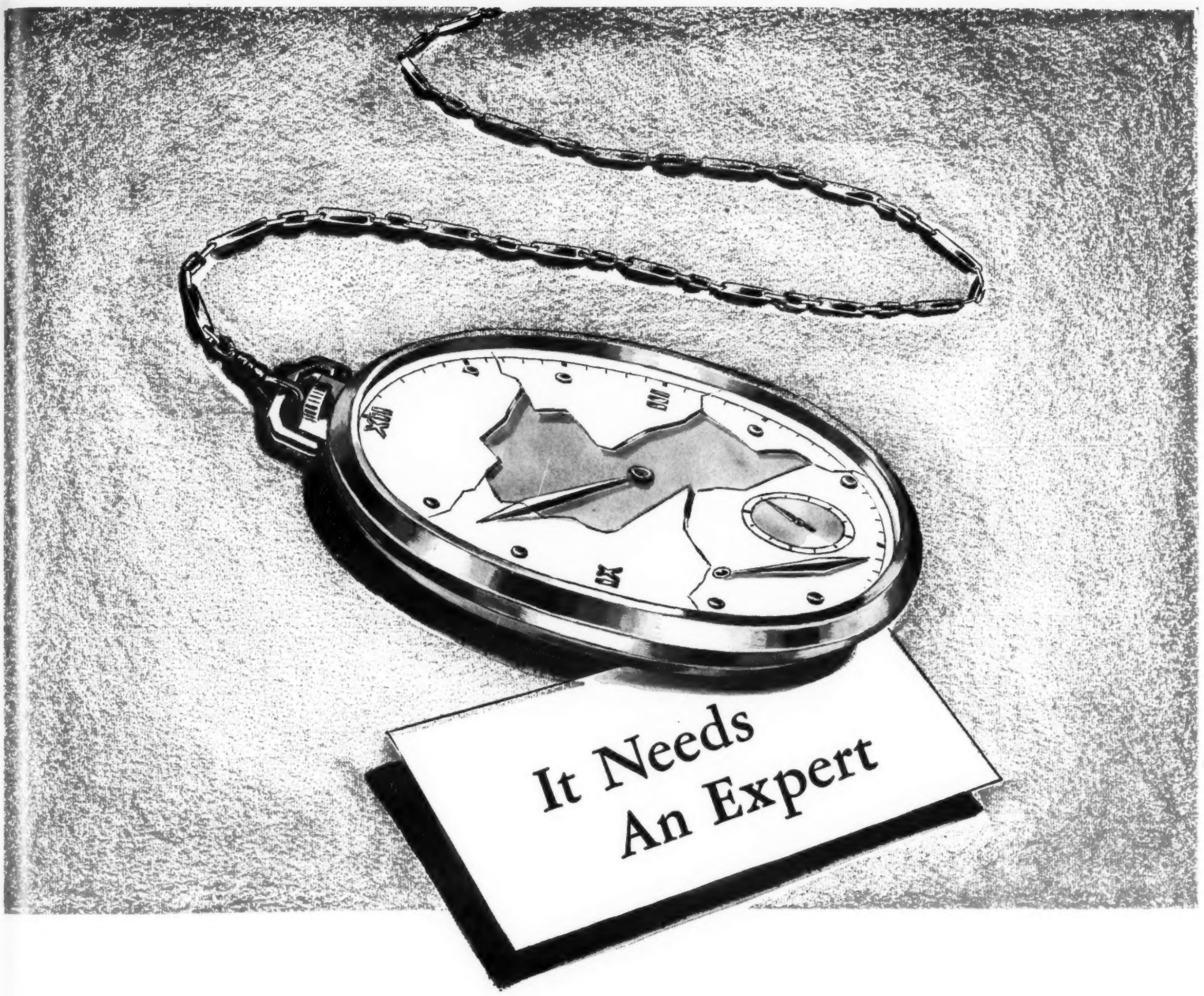
Uhlmann Grain Co. 4
Union Machinery Co. .....
Union Pacific Railroad 23
United Grain Growers, Ltd. 44
Urban, George, Milling Co. 3

V

Valier & Spies Milling Company .....
Van Den Bergh, Gebroeders 47
Van Dusen Harrington Co. 22
Verhoeff's Meel-Import 47
Victor Chemical Works 19a
Virginia-Carolina Chemical Corp. .....
Vis, P. C., & Co. 47
Voigt Milling Co. .....
Vos, M. J., Haarlem, Holland 47

W

Wall-Rogalsky Milling Co. 2
Wallace & Tiernan Co., Inc. .....Cover 3
Walnut Creek Milling Co. 26
Wamego Milling Co. .....
Watson & Philip, Ltd. 47
Watson Higgins Milling Co. 29
Weber Flour Mills Co. 4
Wesson Oil & Snowdrift Sales Co. .....
Western Assurance Co. 44
Western Canada Flour Mills Co., Ltd. 43
Western Milling Co. 3
Western Star Mill Co. 7
Western Waterproofing Co. 26a
White & Co. 46
Whitewater Flour Mills Co. 26
Wichita Flour Mills Co. 19
Williams Bros. Co. 19
Williams, Cohen E., & Sons 4
Winthrop Chemical Co., Inc. 14a, 15a
Witsenberg, M., Jr. .....
Wolcott & Lincoln, Inc. 26
Wolf Milling Co. 26
Woods Mfg. Co., Ltd. 42



If you broke your watch, you wouldn't take it to the man who made the dial—you'd take it to a jeweler who's familiar with the whole art of watch making and repairing.

Like the jeweler, N-A's Flour Milling Service brings to your flour treatment problems, not just a product or group of products, but a complete service in flour maturing, bleaching and enriching backed by years of experience in the science of flour processing—a service that can—in collaboration with your own technicians and consultants—give you a perfectly balanced maturing, bleaching and enriching program for your particular needs.

Your N-A Representative will be glad to tell you more about N-A's Flour Milling Service: Agene—Beta Chlora—Novadelox—N-Richment-A and the N-A Flour Laboratory—to help solve your maturing, bleaching, and enriching problems.

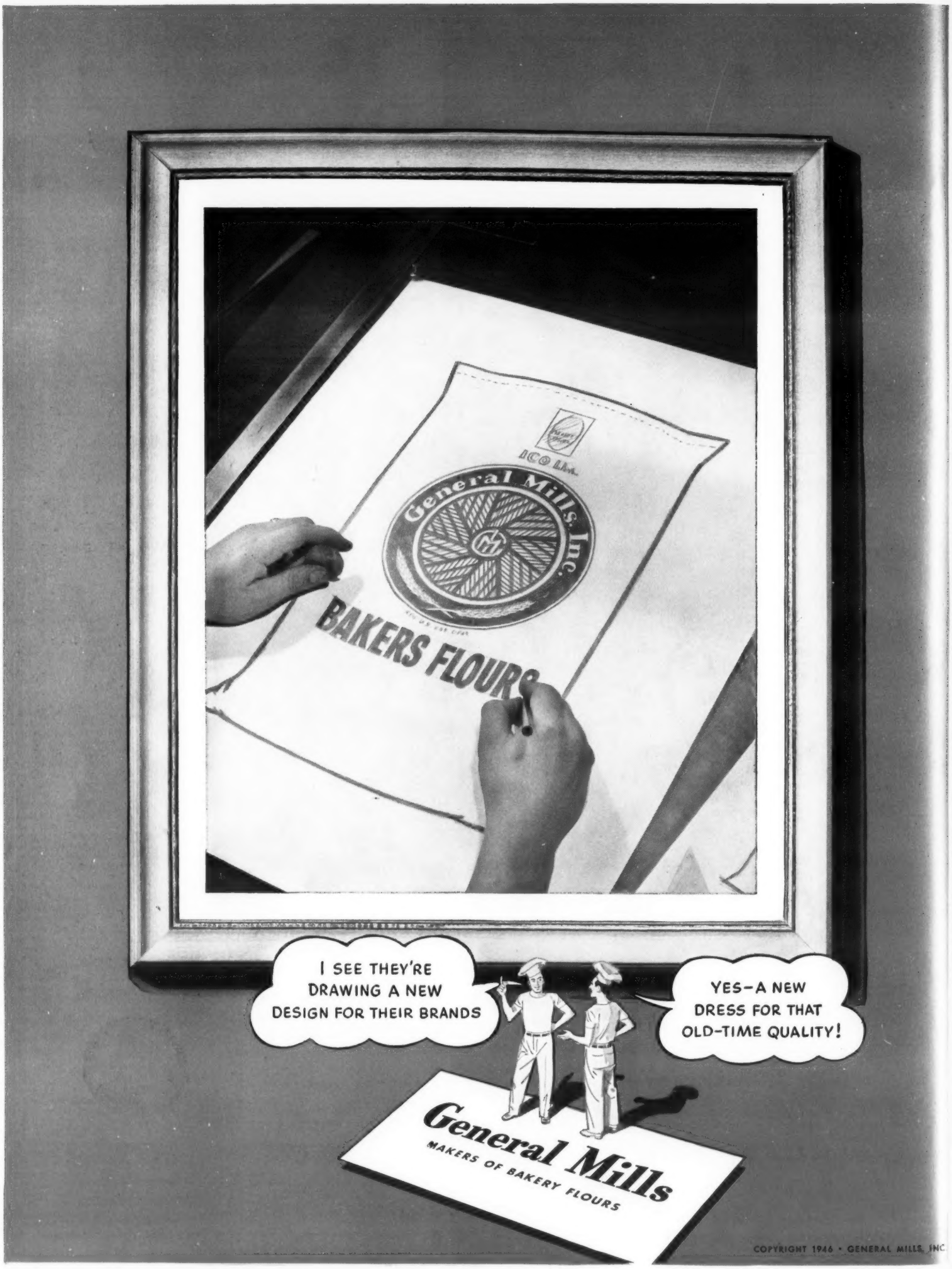
AGENE
— for flour maturing
NOVADELOX
— for a whiter, brighter flour
N-Richment-A
— for uniform enrichment

WALLACE & TIERNAN COMPANY, INC., AGENTS FOR

NOVADEL-AGENE

BELLEVILLE 9, NEW JERSEY

NA-4


General Mills, Inc.
BAKERS FLOURS
I SEE THEY'RE DRAWING A NEW DESIGN FOR THEIR BRANDS
YES—A NEW DRESS FOR THAT OLD-TIME QUALITY!
General Mills
MAKERS OF BAKERY FLOURS
COPYRIGHT 1946 • GENERAL MILLS, INC.